University of Maryland Extension
College of Agriculture and Natural Resources
Wye Research and Extension Center
Queenstown, MD 21658

2022 Maryland Weed Control Results

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Weed Management

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This publication reports research involving pesticides. It does not contain recommendations for their use, nor does it imply that uses discussed in this publication have been registered. All uses or pesticides must be registered by appropriate state and federal agencies before they can be recommended.

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Acknowledgments

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BASF
Corteva
David Tribbett
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Rutgers University
John Swaine
UPL Limited
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Syngenta

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Weed Index

Common Name	**WSSA Code**	**Scientific Name**	**Trial**
Horseweed	ERICA	*Erigeron canadensis*	SG1, SG2, MSB2, Soy3a, Soy4, Soy5, Soy6
Chickweed, Mousear	CERVU	*Cerastium vulgatum*	SG1, SG2
Henbit	LAMAM	*Lamium amplexicaule*	SG1, SG2
Bluegrass, Annual	POAAN	*Poa annua*	SG1, SG2
Pigweed, smooth	AMACH	*Amaranthus hybridus.*	CPPM1, Soy1, Soy2, Soy6, Soy7, Corn1, Corn3, Corn4
Lambsquarters, common	CHEAL	*Chenopodium album*	Soy1, Soy2, Soy4, Soy7, Corn1, Corn2, Corn3, Corn4
Morning Glory spp.	IPOSS	*Ipoea spp.*	Soy1, Soy2, Soy7, Corn1, Corn2, Corn3, Corn4
Foxtail, Giant	SETFA	*Setaria faberi*	Soy1, Soy2, Soy4, Soy7, Corn1, Corn2, Corn3, Corn4
Velvetleaf	ABUTH	*Abutilon theophrasti Medik*	Soy2, Soy7, Corn1, Corn2, Corn3, Corn4
Horsenettle	SOLCA	*Solanum Carolinense*	Corn1
Crabgrass, Large	DIGSA	*Digitaria sanguinalis Scop.*	Corn1, Corn2, Corn3, Corn4
Nutsedge, yellow	CYPES	*Cyperus esculentus*	Corn2, Corn4
Jimsonweed	DATST	*Datura stramonium*	Corn3

Chemical Index

Trade Name	**Common Name**	**Trial**
Gramoxone	*Paraquat*	MSB2, CPPM1
Roundup Powermax	*Glyphosate*	MSB1, MSB2, Soy6, Corn1, Corn3, Red1, Red2, MISC1, MISC3
Starane Ultra	*Fluroxypyr*	SG1
Xtendimax Vaporgrip	*Dicamba*	MSB2, Soy2, Soy4
Select Max	*Clethodim*	MSB1, MSB2, Soy3a, CPPM1
Enlist One	*2,4-D*	MSB2, Soy3a, Soy6
Liberty 280	*Glufosinate Ammonium*	MSB2, Soy2, Soy6
Sharpen	*Saflufenacil*	MSB1, MSB2, Soy4, Soy5
Tarzec	*Pyroxsulam + Halauxifen-Methyl*	SG1
HM-1038D	*"experimental"*	Soy5
Valor SX	*Flumioxazin*	MSB1, Soy1
Engenia	*Dicamba*	Soy3a, Soy7
Assure II	*Quizalofop P-Ethyl*	Soy7
Firstrate	*Cloransulam-Methyl*	Soy7
Classic	*Chlorimuron Ethyl*	Soy7
Python	*Flumetsulam*	Soy7
Scepter	*Imazaquin*	Soy7
Preview 2.1	*Metribuzin + Sulfentrazone*	Soy6
InterMoc	*S-Metolachlor + Glufosinate-Ammonium*	Soy6
Interline	*Glufosinate-Ammonium*	Soy6
Fierce XLT	*Chlorimuron Ethyl + Flumioxazin + Pyroxasulfone*	Soy1, Soy6
Mauler	*Metribuzin*	Soy6
Valor EZ	*Flumioxazin*	Soy6
Warrant	*Acetochlor*	Soy2
MON301668	*"experimental"*	Soy2
ACC 553 CS 9206	*"experimental"*	Soy2
Dual Magnum	*S-Metolachlor*	Soy2, CPPM1
Tendovo	*Cloransulam-Methyl + Metribuzin + S-Metolachlor*	Soy1
Tavium	*Dicamba + S-Metolachlor*	Soy1
Boundary 6.5 EC	*Metribuzin + S-Metolachlor*	Soy1
Broadaxe XC	*S-Metolachlor + Sulfentrazone*	Soy1
Metribuzin	*Metribuzin*	Soy1
Zidua	*Pyroxasulfone*	Soy1
Authority Edge	*Pyroxasulfone + Sulfentrazone*	Soy1
Zidua Pro	*Saflufenacil + Imazethapyr + Pyroxasulfone*	Soy1

Sonic	*Sulfentrazone + Cloransulam-Methyl*	Soy1
Zidua SC	*Pyroxasulfone*	Soy3a
Roundup Powermax 3	*Glyphosate*	Soy1, Soy2, Soy3a, Soy4, Soy5
SC619	*"experimental"*	Soy4
Fierce MTZ	*Flumioxazin + Pyroxasulfone + Metribuzin*	Soy4
Impact Core	*Acetochlor + Topramezone*	Corn1
AATrex	*Atrazine*	Corn1, Corn4
Impact	*Topramezone*	Corn1
Hornet	*Clopyralid + Flumetsulam*	Corn1
Dual II Magnum	*S-Metolachlor*	Corn1
Sinate	*Topramezone + Glufosinate-Ammonium*	Corn1
Bicep II Magnum	*Atrazine + S-Metolachlor*	Corn2
Acuron GT	*S-Metolachlor + Glyphosate + Mesotrione + Bicyclopyrone*	Corn2, Corn3, Corn4
Halex GT	*S-Metolachlor + Glyphosate + Mesotrione*	Corn2, Corn4
Lexar EZ	*Atrazine + S-Metolachlor + Mesotrione*	Corn2
Acuron Flexi	*Bicyclopyrone + Mesotrione + S-Metolachlor*	Corn2
Atrazine 4L	*Atrazine*	Corn2, Corn3, Corn4
Princep 4L	*Simazine*	Corn2, Corn3, Corn4
Corvus	*Isoxaflutole + Thiencarbazone-Methyl*	Corn2, Corn3
Acuron	*Atrazine + Bicyclopyrone + Mesotrione + S-Metolachlor*	Corn2, Corn4
Zidua SC	*Pyroxasulfone*	Corn2
Coyote	*S-Metolachlor + Mesotrione*	Corn3
Resicore XL	*Acetochlor +Clopyralid + Mesotrione*	Corn4
Durango DMA	*Glyphosate*	Corn4
GF-5040	*"experimental"*	Corn4
Red Food Coloring	*Food Coloring*	Red1, Red2
Reflex	*Fomesafen*	CPPM1
Huskie FX	*Bromoxynil + Fluroxypyr + Pyrasulfotole*	SG2
Huskie	*Bromoxynil + Pyrasulfotole*	SG2
Osprey Xtra	*Mesosulfuron-Methyl + Thiencarbazone-Methyl*	SG2
Osprey	*Mesosulfuron-Methyl*	SG2
Quelex	*Halauxifen-Methyl + Florasulam*	SG1

Harmony SG	*Thifensulfuron Methyl*	SG1
Express	*Tribenuron Methyl*	SG1
Powerflex HL	*Pyroxsulam*	SG1
Metribuzin 75	*Metribuzin*	SG1
Pixxaro EC	*Halauxifen-Methyl +Fluroxypyr*	SG1

Daily Weather Data 9/1/21 to 11/30/22
University of Maryland Wye Research and Education Center
Queenstown, MD

Date	Precipitation (IN)	Min Temp (F)	Max Temp (F)	Avg Temp (F)
9/1/21	0.81	88	67	77
9/2/21	0	78	59	68
9/3/21	0	75	56	66
9/4/21	0	77	57	67
9/5/21	0.04	78	64	71
9/6/21	0.6	84	65	74
9/7/21	0	83	62	73
9/8/21	0	85	67	76
9/9/21	0.79	77	65	71
9/10/21	0	76	57	66
9/11/21	0	78	56	67
9/12/21	0	83	68	75
9/13/21	0	87	70	79
9/14/21	0	88	68	78
9/15/21	0	87	72	80
9/16/21	1.17	84	70	77
9/17/21	0	80	69	74
9/18/21	0	82	66	74
9/19/21	0	80	61	70
9/20/21	0	79	57	68
9/21/21	0	82	61	72
9/22/21	0	84	70	77
9/23/21	3.85	77	59	68
9/24/21	0	74	52	63
9/25/21	0	75	50	63
9/26/21	0	74	58	66
9/27/21	0	78	55	66
9/28/21	0	82	65	74
9/29/21	0	69	52	60
9/30/21	0	73	51	62
10/1/21	0	68	49	59
10/2/21	0	76	50	63
10/3/21	0	82	59	70
10/4/21	0	80	68	74
10/5/21	0	83	66	74
10/6/21	0	75	62	68
10/7/21	0	77	60	68
10/8/21	0	78	57	68
10/9/21	0.01	76	59	68
10/10/21	0.02	76	64	70
10/11/21	0	69	63	66
10/12/21	0.02	72	63	68
10/13/21	0	71	61	66
10/14/21	0	77	59	68
10/15/21	0	80	58	69
10/16/21	0.21	81	57	69
10/17/21	0	65	53	59
10/18/21	0	67	47	57
10/19/21	0	71	43	57
10/20/21	0	76	55	65
10/21/21	0	74	50	62
10/22/21	0	69	51	60
10/23/21	0	66	48	57
10/24/21	0	68	52	60
10/25/21	1.31	77	60	68
10/26/21	0.11	67	52	60

10/27/21	0.04	70	51	60
10/28/21	0	66	47	57
10/29/21	1.75	64	55	59
10/30/21	0.01	66	55	60
10/31/21	0	67	53	60
11/1/21	0	62	43	52
11/2/21	0.17	52	40	46
11/3/21	0	52	36	44
11/4/21	0	51	36	43
11/5/21	0	55	34	44
11/6/21	0	59	33	46
11/7/21	0	54	39	46
11/8/21	0	66	38	52
11/9/21	0	71	41	56
11/10/21	0	69	45	57
11/11/21	0	70	44	57
11/12/21	0.23	66	44	55
11/13/21	0	61	41	51
11/14/21	0	51	39	45
11/15/21	0	51	41	46
11/16/21	0	52	38	45
11/17/21	0	65	36	50
11/18/21	0.06	71	46	59
11/19/21	0	48	39	44
11/20/21	0	48	28	38
11/21/21	0	53	33	43
11/22/21	0.02	53	38	45
11/23/21	0	44	35	39
11/24/21	0	46	30	38
11/25/21	0	53	30	42
11/26/21	0.24	48	36	42
11/27/21	0	43	35	39
11/28/21	0	55	33	44
11/29/21	0	47	32	40
11/30/21	0	50	30	40
12/1/21	0.01	54	28	41
12/2/21	0.01	60	45	53
12/3/21	0	59	42	51
12/4/21	0	57	36	46
12/5/21	0	53	31	42
12/6/21	0.03	66	42	54
12/7/21	0	45	28	37
12/8/21	0	41	27	34
12/9/21	0	41	27	34
12/10/21	0	51	34	43
12/11/21	0.31	65	49	57
12/12/21	0	52	31	41
12/13/21	0	52	30	41
12/14/21	0	56	30	43
12/15/21	0	55	31	43
12/16/21	0	63	45	54
12/17/21	0	63	50	57
12/18/21	0.01	54	48	51
12/19/21	0.01	57	32	44
12/20/21	0	38	22	30
12/21/21	0.01	42	26	34
12/22/21	0.04	49	33	41

12/23/21	0	38	29	34
12/24/21	0	54	33	44
12/25/21	0.08	63	46	54
12/26/21	0	57	41	49
12/27/21	0.01	41	32	37
12/28/21	0	55	36	45
12/29/21	0.18	51	46	49
12/30/21	0.19	52	47	49
12/31/21	0	54	49	51
1/1/22	0.33	67	53	60
1/2/22	0.3	60	44	52
1/3/22	1.19	44	28	36
1/4/22	0	32	15	24
1/5/22	0	44	21	32
1/6/22	0	43	34	39
1/7/22	0.22	35	24	29
1/8/22	0	31	23	27
1/9/22	0.51	44	26	35
1/10/22	0	43	27	35
1/11/22	0	28	19	24
1/12/22	0	43	21	32
1/13/22	0	48	26	37
1/14/22	0	48	29	39
1/15/22	0	29	15	22
1/16/22	1.28	49	51	50
1/17/22	0.01	51	33	42
1/18/22	0	40	27	33
1/19/22	0	52	26	39
1/20/22	0.23	47	26	37
1/21/22	0	26	17	22
1/22/22	0	30	19	24
1/23/22	0	38	20	29
1/24/22	0	39	25	32
1/25/22	0	46	30	38
1/26/22	0	32	18	25
1/27/22	0.01	33	13	23
1/28/22	0.22	39	28	33
1/29/22	0.12	30	21	26
1/30/22	0	28	17	23
1/31/22	0	36	20	28
2/1/22	0	41	20	31
2/2/22	0	48	22	35
2/3/22	0.32	56	37	47
2/4/22	0.8	59	33	46
2/5/22	0	33	22	27
2/6/22	0	38	19	28
2/7/22	0.13	40	32	36
2/8/22	0	47	27	37
2/9/22	0	54	25	40
2/10/22	0	58	32	45
2/11/22	0	63	31	47
2/12/22	0	61	44	52
2/13/22	0.02	44	28	36
2/14/22	0	32	21	26
2/15/22	0	36	16	26
2/16/22	0	53	23	38
2/17/22	0.03	68	49	59

2/18/22	0.13	62	31	47
2/19/22	0	48	24	36
2/20/22	0	41	18	29
2/21/22	0	62	32	47
2/22/22	0	64	50	57
2/23/22	0	70	41	56
2/24/22	0.18	41	31	36
2/25/22	0.26	51	23	37
2/26/22	0	41	31	36
2/27/22	0	52	32	42
2/28/22	0	46	32	39
3/1/22	0	53	27	40
3/2/22	0	58	32	45
3/3/22	0	55	34	44
3/4/22	0	41	22	31
3/5/22	0	59	30	45
3/6/22	0.05	72	45	59
3/7/22	0.09	76	55	65
3/8/22	0	56	40	48
3/9/22	0.65	42	38	40
3/10/22	0	51	31	41
3/11/22	0	59	31	45
3/12/22	1.05	49	24	37
3/13/22	0	40	22	31
3/14/22	0	59	29	44
3/15/22	0	67	37	52
3/16/22	0	71	39	55
3/17/22	0.47	58	49	54
3/18/22	0.01	72	46	59
3/19/22	0	73	58	66
3/20/22	0	63	48	55
3/21/22	0	67	45	56
3/22/22	0	64	41	53
3/23/22	0.15	61	43	52
3/24/22	0.6	64	48	56
3/25/22	0	63	47	55
3/26/22	0	54	41	47
3/27/22	0	45	33	39
3/28/22	0	39	28	34
3/29/22	0	43	26	34
3/30/22	0	55	27	41
3/31/22	0.02	67	54	61
4/1/22	0.06	64	43	53
4/2/22	0	53	39	46
4/3/22	0	62	43	53
4/4/22	0	54	39	47
4/5/22	0.58	57	45	51
4/6/22	1.81	60	50	55
4/7/22	0.76	61	47	54
4/8/22	0	63	45	54
4/9/22	0	57	43	50
4/10/22	0	51	36	44
4/11/22	0	61	32	47
4/12/22	0	76	48	62
4/13/22	0	82	53	68
4/14/22	0.04	81	59	70
4/15/22	0	68	45	56

4/16/22	0.22	73	52	63
4/17/22	0	55	38	46
4/18/22	1.23	49	35	42
4/19/22	0	54	41	48
4/20/22	0	58	41	50
4/21/22	0.01	64	43	53
4/22/22	0	73	44	59
4/23/22	0	72	46	59
4/24/22	0	77	50	63
4/25/22	0	70	49	59
4/26/22	0	69	55	62
4/27/22	0	60	44	52
4/28/22	0	57	38	48
4/29/22	0	63	46	55
4/30/22	0	66	36	51
5/1/22	0.19	66	45	55
5/2/22	0	77	51	64
5/3/22	0	72	52	62
5/4/22	0.71	71	51	61
5/5/22	0	66	54	60
5/6/22	0.59	63	51	57
5/7/22	0.41	53	45	49
5/8/22	0	55	43	49
5/9/22	0	67	45	56
5/10/22	0	73	50	61
5/11/22	0	70	51	60
5/12/22	0	70	53	62
5/13/22	0.03	76	60	68
5/14/22	0.11	70	62	66
5/15/22	0.13	78	62	70
5/16/22	0.04	79	62	70
5/17/22	0	80	60	70
5/18/22	0	71	51	61
5/19/22	0.08	80	56	68
5/20/22	0	88	64	76
5/21/22	0	90	72	81
5/22/22	0.48	87	69	78
5/23/22	0.01	73	61	67
5/24/22	0.29	63	53	58
5/25/22	0	71	54	63
5/26/22	0	73	57	65
5/27/22	1.27	79	63	71
5/28/22	0	78	63	71
5/29/22	0	80	59	70
5/30/22	0	86	63	75
5/31/22	0	91	70	80
6/1/22	0	91	71	81
6/2/22	1.61	87	65	76
6/3/22	0.01	79	61	70
6/4/22	0	82	58	70
6/5/22	0	77	57	67
6/6/22	0	80	52	66
6/7/22	0	81	60	71
6/8/22	0.42	85	68	77
6/9/22	0	83	66	74
6/10/22	0	78	61	69
6/11/22	0.03	72	64	68

6/12/22	0.02	79	63	71
6/13/22	0.13	88	69	79
6/14/22	1.49	78	64	71
6/15/22	0	85	63	74
6/16/22	0.36	81	67	74
6/17/22	0	92	72	82
6/18/22	0	74	61	67
6/19/22	0	76	57	66
6/20/22	0	79	51	65
6/21/22	0	80	58	69
6/22/22	0.99	85	65	75
6/23/22	0.89	72	61	67
6/24/22	0	80	60	70
6/25/22	0	85	64	74
6/26/22	0	86	66	76
6/27/22	0.23	82	66	74
6/28/22	0	79	62	70
6/29/22	0	83	60	71
6/30/22	0	87	69	78
7/1/22	0	89	74	82
7/2/22	1.04	86	72	79
7/3/22	0.04	85	67	76
7/4/22	0	83	64	74
7/5/22	0.11	85	67	76
7/6/22	0.31	89	72	81
7/7/22	0.38	77	69	73
7/8/22	0	84	65	75
7/9/22	0.64	76	68	72
7/10/22	0	80	62	71
7/11/22	0	81	59	70
7/12/22	0.28	88	70	79
7/13/22	0	88	70	79
7/14/22	0	88	71	79
7/15/22	0	86	69	78
7/16/22	0.31	87	67	77
7/17/22	0	85	71	78
7/18/22	0.53	89	74	82
7/19/22	0	88	72	80
7/20/22	0	90	73	82
7/21/22	0	91	77	84
7/22/22	0	91	74	82
7/23/22	0	91	74	83
7/24/22	0	91	71	81
7/25/22	0.04	89	76	83
7/26/22	0	79	73	76
7/27/22	0	86	73	80
7/28/22	0.13	89	75	82
7/29/22	0	87	70	79
7/30/22	0	85	71	78
7/31/22	0.29	86	68	77
8/1/22	0	84	70	77
8/2/22	0.09	90	71	81
8/3/22	0	90	69	79
8/4/22	0.95	92	70	81
8/5/22	0.17	90	71	80
8/6/22	0	86	73	79
8/7/22	0	89	77	83

8/8/22	0.03	90	78	84
8/9/22	0	92	77	85
8/10/22	0.42	90	72	81
8/11/22	0	85	71	78
8/12/22	0	83	63	73
8/13/22	0	80	61	71
8/14/22	0	83	64	74
8/15/22	0.02	81	63	72
8/16/22	0	81	60	71
8/17/22	0	82	60	71
8/18/22	0	83	60	72
8/19/22	0	87	65	76
8/20/22	0	88	66	77
8/21/22	0.75	81	67	74
8/22/22	0	85	69	77
8/23/22	0	87	69	78
8/24/22	0	87	67	77
8/25/22	0	87	66	77
8/26/22	0	87	73	80
8/27/22	0	89	70	79
8/28/22	0	89	67	78
8/29/22	0	89	72	80
8/30/22	0.2	74	72	73
8/31/22	0	83	70	76
9/1/22	0	86	62	74
9/2/22	0	86	63	74
9/3/22	0	87	63	75
9/4/22	0	88	67	78
9/5/22	0	86	68	77
9/6/22	0.55	79	69	74
9/7/22	0.09	74	67	71
9/8/22	0	80	63	72
9/9/22	0	82	59	71
9/10/22	0	83	57	70
9/11/22	0.8	78	70	74
9/12/22	0.85	84	69	77
9/13/22	0.06	80	64	72
9/14/22	0	79	60	70
9/15/22	0	78	57	68
9/16/22	0	76	52	64
9/17/22	0	79	55	67
9/18/22	0	81	61	71
9/19/22	0	84	64	74
9/20/22	0	83	62	72
9/21/22	0	82	60	71
9/22/22	0.11	81	60	71
9/23/22	0	68	53	61
9/24/22	0	68	46	57
9/25/22	0.13	80	55	68
9/26/22	0	78	57	67
9/27/22	0	74	58	66
9/28/22	0	70	51	60
9/29/22	0	70	54	62
9/30/22	0.38	63	53	58
10/1/22	0.48	67	57	62
10/2/22	0.54	62	49	55
10/3/22	0.82	52	44	48

10/4/22	1.41	52	46	49
10/5/22	0.09	62	51	57
10/6/22	0	73	49	61
10/7/22	0	76	50	63
10/8/22	0	61	43	52
10/9/22	0	63	41	52
10/10/22	0	67	41	54
10/11/22	0	72	44	58
10/12/22	0	71	46	58
10/13/22	0.06	72	59	66
10/14/22	0	67	46	57
10/15/22	0	73	45	59
10/16/22	0.03	69	51	60
10/17/22	0.03	69	54	61
10/18/22	0	57	43	50
10/19/22	0	57	36	46
10/20/22	0	60	43	51
10/21/22	0	66	39	52
10/22/22	0	69	39	54
10/23/22	0.47	64	46	55
10/24/22	0.41	60	54	57
10/25/22	0.02	61	58	60
10/26/22	0.02	65	58	62
10/27/22	0	65	48	57
10/28/22	0	63	45	54
10/29/22	0	63	40	51
10/30/22	0	60	39	49
10/31/22	0.17	67	45	56
11/1/22	0	72	53	63
11/2/22	0	68	48	58
11/3/22	0	70	43	57
11/4/22	0	72	48	60
11/5/22	0	78	60	69
11/6/22	0	77	66	71
11/7/22	0	79	54	66
11/8/22	0	61	45	53
11/9/22	0	60	40	50
11/10/22	0	70	43	57
11/11/22	0.6	71	59	65
11/12/22	0.01	71	60	66
11/13/22	0	60	41	51
11/14/22	0	48	33	40
11/15/22	0.75	46	32	39
11/16/22	0.01	53	41	47
11/17/22	0	46	37	41
11/18/22	0	46	35	41
11/19/22	0	45	33	39
11/20/22	0	44	31	37
11/21/22	0	45	23	34
11/22/22	0	55	29	42
11/23/22	0	60	29	45
11/24/22	0	57	29	43
11/25/22	0.09	60	42	51
11/26/22	0	56	37	47
11/27/22	0.46	61	42	52
11/28/22	0	56	43	50
11/29/22	0	51	32	42

11/30/22	0.29	55	42	49

University of Maryland

Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: May-18-2022
Initiation Date: May-20-2022
Completion Date: Oct-20-2022

Trial Location
City: Queenstown **Country:** USA United States
State/Prov.: Maryland
Postal Code: 21658 **Climate Zone:** EPPONE EPPO North East

Latitude of LL Corner °: 38.9147863 N
Longitude of LL Corner °: -76.1452663 W

Objectives:
Evaluate herbicide treatments with Impact Core, Sinate, Hornet for weed contol efficacy and crop safety.

Crop Description
Crop 1: C ZEAMD Zea mays indentata Dent corn
Entry Date: May-23-2022 **Stage Scale:** BBCH
Variety: Brevant B12G75PWE
Attributes: Enlist, LL, RR
Planting Date: May-20-2022 **Planting Rate:** 30000 S/A
Row Spacing: 30 IN **Planting Equipment:** FE field equipment
Emergence Date: May-26-2022
Harvest Date: Oct-10-2022 **Harvest Equipment:** Small plot combine
Harvested Width: 5 FT
% Standard Moisture: 15 **Harvested Length:** 25 FT

Pest Description
Pest 1 Type: W **Code:** CHEAL Chenopodium album **Entry Date:** Jun-6-2022
Common Name: common lambsquarters **Stage Scale:** BBCH
Artificial Population: N no

Pest 2 Type: W **Code:** IPOSS Ipomoea sp. **Entry Date:** Jun-6-2022
Common Name: Morning glory **Stage Scale:** BBCH
Artificial Population: N no

Pest 3 Type: W **Code:** SETFA Setaria faberi **Entry Date:** Jun-6-2022
Common Name: Giant foxtail **Stage Scale:** BBCH
Artificial Population: N no

Site and Design
Treated Plot Width: 10 FT **Site Type:** FIELD field
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2 **Tillage Type:** CONTIL conventional-till
Replications: 4 **Treatments:** 10 **Plots:** 40 **Study Design:** RACOBL Randomized Complete Block (RCB)

Field Prep./Maintenance:
1. 3-31-2022 Chisel plow 9” deep
2. 4-21-2022 Spread potash 0-0-60 At 100 lbs/ac
3. 4-22-2022 Disked whole field with massey disk and solid packer
4. 5-19-2022 Disked grassy spots only with massey disk and solid packer
5. 5-20-2022 Field cultivated whole field with field cultivator and rolling harrow
6. 5-20-2022 Sprayed 30% at 55.20 gpa on whole field
7. 5-20-2022 Planted plots with Brevant seed at 30000 sds/ac

Soil Description
Description Name: J-05
% Sand: 20 **% OM:** 2.3 **Texture:** SIL silt loam
% Silt: 67 **Soil Name:** Mattapex-Butlertown silt loam
% Clay: 13
pH: 6.2 **CEC:** 5.8
Soil Drainage: G good

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Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Application Description

	A	B	C	D
Application Date	May-20-2022	Jun-6-2022	Jun-13-2022	Jun-21-2022
Appl. Start Time	3:09 PM	12:49 PM	8:39 AM	2:00 AM
Appl. Stop Time	4:46 PM	2:45 PM	9:49 AM	2:30 AM
Application Method	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing	PREPRE	POSPOS	POSPOS	POSPOS
Application Placement	BROSOI	BROADC	BROADC	BROADC
Applied By	Vollmer, K.	Vollmer, K.	Vollmer, K.	Vollmer, K.
Appl. Entry Date	May-23-2022	Jun-6-2022	Jun-13-2022	Jun-24-2022
Air Temperature Start, Stop	86, 86 F	77, 80 F	76, 78 -	77, 77 F
% Relative Humidity Start, Stop	60, 66	37, 31	96, 92	51, 51
Wind Velocity+Dir. Start	10 MPH, NNE	8 MPH, N	1 MPH, NE	6 MPH, NE
Wind Velocity+Dir. Stop	12 MPH, S	10 MPH, NW	3 MPH, NE	6 MPH, NE
Wind Velocity+Dir. Max	12 MPH, S	10 MPH, NW	3 MPH, NE	10 MPH, NE
Wet Leaves (Y/N)	N, no	N, no	N, no	N, no
Soil Moisture	SLIDRY	SLIWET	SLIWET	DRY
% Cloud Cover	90	0	85	75
Next Moisture Occurred On	May-20-2022	Jun-8-2022	Jun-13-2022	Jun-22-2022
Time to Next Moisture	0.0 HR	48.0 HR	6.0 HR	24.0 HR
Moisture 6 Hours after Appl.	0 IN	0 IN	0.13 IN	0 IN
Moisture 1 Week after Appl.	2.05 IN	0.6 IN	1.85 IN	0.17 IN

Comment:
5/20/2022: Light showers occured while making application. No measurable accumulation occured.

6/6/2022: Corn V3, 5"

6/13/2022: Corn V4-V5, 10"

6/21/2022: Corn V7, 20"

Crop Stage At Each Application

	A	B	C	D
Crop 1 Code, BBCH Scale	ZEAMD, BCOR	ZEAMD, BCOR	ZEAMD, BCOR	ZEAMD, BCOR
Days after Emergence	-6	11	18	26
Stage Majority, Percent		V3, 100	V4, 90	V7, 100
Stage Minimum, Percent		V3, 100	V4, 90	V7, 100
Stage Maximum, Percent		V3, 100	V5, 10	V7, 100
Height Average		5 IN	9.6 IN	20 IN
Height Minimum, Maximum		5, 5	9, 10	20, 20

Pest Stage At Each Application

	A	B	C	D
Pest 1 Code, Type, Scale	CHEAL, W, BBCH	CHEAL, W, BBCH	CHEAL, W, BBCH	CHEAL, W, BBCH
Stage Majority, Percent	00, -	13, -	16, -	
Stage Minimum, Percent	00, -	13, -	14, -	
Stage Maximum, Percent	00, -	13, -	16, -	
Height Average	0 IN		2 IN	
Height Minimum, Maximum	0, 0		2, 2.5	
Pest 2 Code, Type, Scale	IPOSS, W, BBCH	IPOSS, W, BBCH	IPOSS, W, BBCH	IPOSS, W, BBCH
Stage Majority, Percent	00, -	13, -	15, -	
Stage Minimum, Percent	00, -	13, -	15, -	
Stage Maximum, Percent	00, -	13, -	15, -	
Height Average	0 IN	1 IN	3 m	
Height Minimum, Maximum	0, 0	1, 1	2, 4	
Pest 3 Code, Type, Scale	SETFA, W, BBCH	SETFA, W, BBCH	SETFA, W, BBCH	SETFA, W, BBCH
Stage Majority, Percent	00, -	13, -	15, -	
Stage Minimum, Percent	00, -	12, -	15, -	
Stage Maximum, Percent	00, -	13, -	15, -	
Height Average	0 IN	1 IN	1 IN	
Height Minimum, Maximum	0, 0	1, 1	1, 1	

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Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Application Equipment

	A	B	C	D
Equipment Type	BACCAI	BACCAI	BACCAI	BACCAI
Operation Pressure	23 PSI	19 PSI	14 PSI	14 PSI
Nozzle Type	FLAFAN	FLAFAN	FLAFAN	FLAFAN
Nozzle Tip Size, Color	8002, Yellow	8003, Blue	8003, Blue	8003, Blue
Nozzle Spacing	18.0 IN	20 IN	20 IN	20 IN
Nozzles/Row	6.0	6.0	6.0	6.0
Boom Height	12.0 IN	12.0 IN	12.0 IN	12.0 IN
Ground Speed	3 MPH	3.5 MPH	3 MPH	3 MPH
Carrier	WATER	WATER	WATER	WATER
Application Amount	15 GAL/AC	15 GAL/AC	15 GAL/AC	15 GAL/AC
Mix Size	2.0 L	2.0 L	2.0 L	2.0 L
Propellant	COMCO2	COMCO2	COMCO2	COMCO2

University of Maryland

Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	5*	12*
	Pest Type					W, Weed	W, Weed	W, Weed	W, Weed	
	Pest Code					CHEAL	IPOSS	DIGSA	DIGSA	
	Pest Name					common lambsqua>	Morning glory	large crabgrass	large crabgrass	
	Crop Type, Code				C, ZEAMD					C, ZEAMD
	Crop Name				Dent corn					Dent corn
	Rating Date				Jun-6-2022	Jun-6-2022	Jun-6-2022	Jun-6-2022	Jun-6-2022	Jun-20-2022
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-7-2022	Jun-7-2022	Jun-7-2022	Jun-7-2022	Jun-7-2022	Jun-20-2022
	Days After First/Last Applic.				17, 17	17, 17	17, 17	17, 17	17, 17	31, 7
	Days After Emergence				11 DE-1	11 DE-1	11 DE-1	11 DE-1	11 DE-1	25 DE-1
	ARM Action Codes									
1	untreated				0.0	0.0	0.0	0.0	0.0	0.0
2	Impact Core	1.68	lb ai/a	B	0.0 -					0.0 -
	AAtrex	1.5	lb ai/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
3	Impact Core	1.12	lb ai/a	B	0.0 -					0.0 -
	Impact	0.0109	lb ai/a	B						
	AAtrex	1.5	lb ai/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
4	Impact Core	1.68	lb ai/a	B	0.0 -					0.0 -
	AAtrex	1.5	lb ai/a	B						
	Roundup PowerMax	1	lb ae/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
5	Impact Core	1.68	lb ai/a	B	0.0 -					0.0 -
	Hornet	0.128	lb ai/a	B						
	Roundup PowerMax	1	lb ae/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
6	Sinate	0.56	lb ai/a	B	0.0 -					0.0 -
	AAtrex	1.5	lb ai/a	B						
	Dual II Magnum	1.27	lb ai/a	B						
	methylated seed oil	1	% v/v	B						
	ammonium sulfate	3	lb/a	B						
7	Dual II Magnum	1.6	lb ai/a	A	0.0 -	75.0 -	0.0 -	94.5 -	94.5 -	0.0 -
	Impact Core	1.12	lb ai/a	C						
	AAtrex	0.5	lb ai/a	C						
	methylated seed oil	0.5	% v/v	C						
	ammonium sulfate	2.5	lb/a	C						
8	Dual II Magnum	1.6	lb ai/a	A	0.0 -	75.0 -	0.0 -	75.0 -	75.0 -	0.0 -
	Impact	0.0219	lb ai/a	C						
	AAtrex	0.5	lb ai/a	C						
	methylated seed oil	0.5	% v/v	C						
	ammonium sulfate	2.5	lb/a	C						
9	Dual II Magnum	1.6	lb ai/a	A	0.0 -	100.0 -	0.0 -	100.0 -	100.0 -	0.0 -
	Sinate	0.48	lb ai/a	C						
	AAtrex	0.5	lb ai/a	C						
	methylated seed oil	1	% v/v	C						
	ammonium sulfate	3	lb/a	C						

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 3=3.7; 21=3.9; 34,36=3.6
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,3,12,13,17,18,23,35 because error mean square = 0.
^Calculated from residual.

University of Maryland

Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	5*	12*
	Pest Type					W, Weed	W, Weed	W, Weed	W, Weed	
	Pest Code					CHEAL	IPOSS	DIGSA	DIGSA	
	Pest Name					common lambsqua>	Morning glory	large crabgrass	large crabgrass	
	Crop Type, Code				C, ZEAMD					C, ZEAMD
	Crop Name				Dent corn					Dent corn
	Rating Date				Jun-6-2022	Jun-6-2022	Jun-6-2022	Jun-6-2022	Jun-6-2022	Jun-20-2022
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-7-2022	Jun-7-2022	Jun-7-2022	Jun-7-2022	Jun-7-2022	Jun-20-2022
	Days After First/Last Applic.				17, 17	17, 17	17, 17	17, 17	17, 17	31, 7
	Days After Emergence				11 DE-1	11 DE-1	11 DE-1	11 DE-1	11 DE-1	25 DE-1
	ARM Action Codes									
10	Dual II Magnum	1.6	lb ai/a	A	0.0 -	97.3 -	0.0 -	100.0 -	100.0 -	0.0 -
	Impact	0.0328	lb ai/a	D						
	methylated seed oil	1	% v/v	D						
	ammonium sulfate	3	lb/a	D						
	LSD P=.05				.	59.73	.	40.17	40.17	.
	Standard Deviation				0.00	37.34	0.00	25.11	25.11	0.00
	CV				0.0	43.01	0.0	27.18	27.18	0.0
	Grand Mean				0.00	86.81	0.00	92.38	92.38	0.00
	Levene's F^				.	0.599	.	0.951	0.951	.
	Levene's Prob(F)				.	0.628	.	0.447	0.447	.
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				.	.	.	.	.	.
	P(Shapiro-Wilk)^				.	.	.	.	.	.
	Skewness^				.	-2.4947	.	-3.9132	-3.9132	.
	P(Skewness)^				.	.	.	.	.	.
	Kurtosis^				.	4.8488	.	15.4876	15.4876	.
	P(Kurtosis)^				.	.	.	.	.	.
	Replicate F				0.000	0.594	0.000	0.982	0.982	0.000
	Replicate Prob(F)				1.0000	0.6348	1.0000	0.4434	0.4434	1.0000
	Treatment F				0.000	0.537	0.000	0.894	0.894	0.000
	Treatment Prob(F)				1.0000	0.6684	1.0000	0.4809	0.4809	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 3=3.7; 21=3.9; 34,36=3.6
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,3,12,13,17,18,23,35 because error mean square = 0.
^Calculated from residual.

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Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	13*	14*	15*	17*	18*	19*
	Pest Type				W, Weed	W, Weed	W, Weed		W, Weed	W, Weed
	Pest Code				CHEAL	IPOSS	SETFA		AMACH	CHEAL
	Pest Name				common lambsqua>	Morning glory	Giant foxtail		smooth pigweed	common lambsqua>
	Crop Type, Code							C, ZEAMD		
	Crop Name							Dent corn		
	Rating Date				Jun-20-2022	Jun-20-2022	Jun-20-2022	Jun-27-2022	Jun-27-2022	Jun-27-2022
	Rating Type				CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-20-2022	Jun-20-2022	Jun-20-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022
	Days After First/Last Applic.				31, 7	31, 7	31, 7	38, 6	38, 6	38, 6
	Days After Emergence				25 DE-1	25 DE-1	25 DE-1	32 DE-1	32 DE-1	32 DE-1
	ARM Action Codes									
1	untreated				0.0	0.0	0.0	0.0	0.0	0.0
2	Impact Core	1.68	lb ai/a	B	100.0 -	100.0 a	99.3 a	0.0 -	100.0 -	100.0 a
	AAtrex	1.5	lb ai/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
3	Impact Core	1.12	lb ai/a	B	100.0 -	97.3 a	97.5 a	0.0 -	100.0 -	100.0 a
	Impact	0.0109	lb ai/a	B						
	AAtrex	1.5	lb ai/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
4	Impact Core	1.68	lb ai/a	B	100.0 -	99.0 a	100.0 a	0.0 -	100.0 -	100.0 a
	AAtrex	1.5	lb ai/a	B						
	Roundup PowerMax	1	lb ae/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
5	Impact Core	1.68	lb ai/a	B	100.0 -	99.0 a	100.0 a	0.0 -	100.0 -	100.0 a
	Hornet	0.128	lb ai/a	B						
	Roundup PowerMax	1	lb ae/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
6	Sinate	0.56	lb ai/a	B	100.0 -	100.0 a	100.0 a	0.0 -	100.0 -	100.0 a
	AAtrex	1.5	lb ai/a	B						
	Dual II Magnum	1.27	lb ai/a	B						
	methylated seed oil	1	% v/v	B						
	ammonium sulfate	3	lb/a	B						
7	Dual II Magnum	1.6	lb ai/a	A	100.0 -	86.8 a	81.0 b	0.0 -	100.0 -	98.8 a
	Impact Core	1.12	lb ai/a	C						
	AAtrex	0.5	lb ai/a	C						
	methylated seed oil	0.5	% v/v	C						
	ammonium sulfate	2.5	lb/a	C						
8	Dual II Magnum	1.6	lb ai/a	A	100.0 -	95.3 a	100.0 a	0.0 -	100.0 -	100.0 a
	Impact	0.0219	lb ai/a	C						
	AAtrex	0.5	lb ai/a	C						
	methylated seed oil	0.5	% v/v	C						
	ammonium sulfate	2.5	lb/a	C						
9	Dual II Magnum	1.6	lb ai/a	A	100.0 -	99.5 a	100.0 a	0.0 -	100.0 -	100.0 a
	Sinate	0.48	lb ai/a	C						
	AAtrex	0.5	lb ai/a	C						
	methylated seed oil	1	% v/v	C						
	ammonium sulfate	3	lb/a	C						

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 3=3.7; 21=3.9; 34,36=3.6
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,3,12,13,17,18,23,35 because error mean square = 0.
^Calculated from residual.

University of Maryland

Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	13*	14*	15*	17*	18*	19*
	Pest Type				W, Weed	W, Weed	W, Weed		W, Weed	W, Weed
	Pest Code				CHEAL	IPOSS	SETFA		AMACH	CHEAL
	Pest Name				common lambsqua>	Morning glory	Giant foxtail		smooth pigweed	common lambsqua>
	Crop Type, Code							C, ZEAMD		
	Crop Name							Dent corn		
	Rating Date				Jun-20-2022	Jun-20-2022	Jun-20-2022	Jun-27-2022	Jun-27-2022	Jun-27-2022
	Rating Type				CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-20-2022	Jun-20-2022	Jun-20-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022
	Days After First/Last Applic.				31, 7	31, 7	31, 7	38, 6	38, 6	38, 6
	Days After Emergence				25 DE-1	25 DE-1	25 DE-1	32 DE-1	32 DE-1	32 DE-1
	ARM Action Codes									
10	Dual II Magnum	1.6	lb ai/a	A	0.0 -	0.0 b	100.0 a	0.0 -	100.0 -	84.0 b
	Impact	0.0328	lb ai/a	D						
	methylated seed oil	1	% v/v	D						
	ammonium sulfate	3	lb/a	D						
	LSD P=.05				.	12.06	10.23	.	.	8.98
	Standard Deviation				0.00	8.26	7.01	0.00	0.00	6.15
	CV				0.0	9.57	7.19	0.0	0.0	6.27
	Grand Mean				88.89	86.31	97.53	0.00	100.00	98.08
	Levene's F^				.	0.748	1.568	.	.	175.293*
	Levene's Prob(F)				.	0.65	0.181	.	.	0.00*
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				.	0.6944*	0.6479*	.	.	0.7545*
	P(Shapiro-Wilk)^				.	0.0*	0.0*	.	.	0.0*
	Skewness^				.	-2.794*	-2.5749*	.	.	0.0044
	P(Skewness)^				.	0.0*	0.0*	.	.	0.9914
	Kurtosis^				.	14.3508*	14.3985*	.	.	4.6688*
	P(Kurtosis)^				.	0.0*	0.0*	.	.	0.0*
	Replicate F				0.000	1.183	1.237	0.000	0.000	1.176
	Replicate Prob(F)				1.0000	0.3372	0.3183	1.0000	1.0000	0.3396
	Treatment F				0.000	62.382	3.183	0.000	0.000	2.963
	Treatment Prob(F)				1.0000	0.0001	0.0132	1.0000	1.0000	0.0186

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 3=3.7; 21=3.9; 34,36=3.6
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,3,12,13,17,18,23,35 because error mean square = 0.
^Calculated from residual.

University of Maryland

Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	20*	21*	23*	24*	25*	26*	27*
	Pest Type				W, Weed	W, Weed		W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				IPOSS	SETFA		ABUTH	CHEAL	IPOSS	SETFA
	Pest Name				Morning glory	Giant foxtail		velvetleaf	common lambsqua>	Morning glory	Giant foxtail
	Crop Type, Code						C, ZEAMD				
	Crop Name						Dent corn				
	Rating Date				Jun-27-2022	Jun-27-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022
	Rating Type				CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022
	Days After First/Last Applic.				38, 6	38, 6	46, 14	46, 14	46, 14	46, 14	46, 14
	Days After Emergence				32 DE-1	32 DE-1	40 DE-1	40 DE-1	40 DE-1	40 DE-1	40 DE-1
	ARM Action Codes										
1	untreated				0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Impact Core	1.68	lb ai/a	B	94.3 a	97.5 a	0.0 -	100.0 -	100.0 a	93.3 a	95.8 a
	AAtrex	1.5	lb ai/a	B							
	methylated seed oil	0.5	% v/v	B							
	ammonium sulfate	2.5	lb/a	B							
3	Impact Core	1.12	lb ai/a	B	91.5 a	99.0 a	0.0 -	100.0 -	100.0 a	91.3 a	95.8 a
	Impact	0.0109	lb ai/a	B							
	AAtrex	1.5	lb ai/a	B							
	methylated seed oil	0.5	% v/v	B							
	ammonium sulfate	2.5	lb/a	B							
4	Impact Core	1.68	lb ai/a	B	90.5 a	100.0 a	0.0 -	100.0 -	100.0 a	89.8 a	99.5 a
	AAtrex	1.5	lb ai/a	B							
	Roundup PowerMax	1	lb ae/a	B							
	methylated seed oil	0.5	% v/v	B							
	ammonium sulfate	2.5	lb/a	B							
5	Impact Core	1.68	lb ai/a	B	94.5 a	100.0 a	0.0 -	100.0 -	100.0 a	94.5 a	100.0 a
	Hornet	0.128	lb ai/a	B							
	Roundup PowerMax	1	lb ae/a	B							
	methylated seed oil	0.5	% v/v	B							
	ammonium sulfate	2.5	lb/a	B							
6	Sinate	0.56	lb ai/a	B	97.0 a	100.0 a	0.0 -	100.0 -	100.0 a	98.0 a	100.0 a
	AAtrex	1.5	lb ai/a	B							
	Dual II Magnum	1.27	lb ai/a	B							
	methylated seed oil	1	% v/v	B							
	ammonium sulfate	3	lb/a	B							
7	Dual II Magnum	1.6	lb ai/a	A	65.0 ab	77.3 b	0.0 -	97.5 -	100.0 a	80.0 a	57.5 b
	Impact Core	1.12	lb ai/a	C							
	AAtrex	0.5	lb ai/a	C							
	methylated seed oil	0.5	% v/v	C							
	ammonium sulfate	2.5	lb/a	C							
8	Dual II Magnum	1.6	lb ai/a	A	53.3 b	100.0 a	0.0 -	97.5 -	100.0 a	55.8 b	100.0 a
	Impact	0.0219	lb ai/a	C							
	AAtrex	0.5	lb ai/a	C							
	methylated seed oil	0.5	% v/v	C							
	ammonium sulfate	2.5	lb/a	C							
9	Dual II Magnum	1.6	lb ai/a	A	96.8 a	100.0 a	0.0 -	100.0 -	100.0 a	96.3 a	100.0 a
	Sinate	0.48	lb ai/a	C							
	AAtrex	0.5	lb ai/a	C							
	methylated seed oil	1	% v/v	C							
	ammonium sulfate	3	lb/a	C							

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 3=3.7; 21=3.9; 34,36=3.6
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,3,12,13,17,18,23,35 because error mean square = 0.
^Calculated from residual.

University of Maryland

Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	20*	21*	23*	24*	25*	26*	27*
	Pest Type				W, Weed	W, Weed		W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				IPOSS	SETFA		ABUTH	CHEAL	IPOSS	SETFA
	Pest Name				Morning glory	Giant foxtail		velvetleaf	common lambsqua>	Morning glory	Giant foxtail
	Crop Type, Code						C, ZEAMD				
	Crop Name						Dent corn				
	Rating Date				Jun-27-2022	Jun-27-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022
	Rating Type				CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022
	Days After First/Last Applic.				38, 6	38, 6	46, 14	46, 14	46, 14	46, 14	46, 14
	Days After Emergence				32 DE-1	32 DE-1	40 DE-1	40 DE-1	40 DE-1	40 DE-1	40 DE-1
	ARM Action Codes										
10	Dual II Magnum	1.6	lb ai/a	A	65.0 ab	100.0 a	0.0 -	100.0 -	88.8 b	25.0 c	100.0 a
	Impact	0.0328	lb ai/a	D							
	methylated seed oil	1	% v/v	D							
	ammonium sulfate	3	lb/a	D							
	LSD P=.05				24.72	9.86	.	3.51	6.40	20.97	14.05
	Standard Deviation				16.94	6.74	0.00	2.41	4.38	14.37	9.63
	CV				20.38	6.95	0.0	2.42	4.44	17.87	10.21
	Grand Mean				83.08	96.97	0.00	99.44	98.75	80.42	94.28
	Levene's F^				1.003	3.342*	.	0.719	55.125*	0.896	7.016*
	Levene's Prob(F)				0.457	0.009*	.	0.674	0.00*	0.533	0.00*
	Rank X2				.	.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.	.
	Shapiro-Wilk^				0.8656*	0.6983*	.	0.6956*	0.7343*	0.8984*	0.7462*
	P(Shapiro-Wilk)^				0.0004*	0.0*	.	0.0*	0.0*	0.0031*	0.0*
	Skewness^				-1.6954*	-1.6801*	.	-2.2324*	-0.1845	0.8242	-1.0004*
	P(Skewness)^				0.0002*	0.0003*	.	0.0*	0.6544	0.0515	0.0195*
	Kurtosis^				6.0735*	10.7123*	.	7.248*	5.7265*	4.5893*	9.5124*
	P(Kurtosis)^				0.0*	0.0*	.	0.0*	0.0*	0.0*	0.0*
	Replicate F				1.613	1.263	0.000	0.640	1.000	0.533	1.286
	Replicate Prob(F)				0.2126	0.3104	1.0000	0.5967	0.4098	0.6640	0.3020
	Treatment F				4.019	4.899	0.000	0.840	2.928	11.638	8.345
	Treatment Prob(F)				0.0038	0.0013	1.0000	0.5774	0.0197	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 3=3.7; 21=3.9; 34,36=3.6
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,3,12,13,17,18,23,35 because error mean square = 0.
^Calculated from residual.

University of Maryland

Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	29*	30*	31*	32*	34*	35*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				ABUTH	CHEAL	IPOSS	SETFA	ABUTH	CHEAL
	Pest Name				velvetleaf	common lambsqua>	Morning glory	Giant foxtail	velvetleaf	common lambsqua>
	Crop Type, Code									
	Crop Name									
	Rating Date				Jul-11-2022	Jul-11-2022	Jul-11-2022	Jul-11-2022	Jul-18-2022	Jul-18-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-13-2022	Jul-13-2022	Jul-13-2022	Jul-13-2022	Jul-25-2022	Jul-25-2022
	Days After First/Last Applic.				52, 20	52, 20	52, 20	52, 20	59, 27	59, 27
	Days After Emergence				46 DE-1	46 DE-1	46 DE-1	46 DE-1	53 DE-1	53 DE-1
	ARM Action Codes									
1	untreated				0.0	0.0	0.0	0.0	0.0	0.0
2	Impact Core	1.68	lb ai/a	B	100.0 -	100.0 -	85.8 a	91.0 a	100.0 -	100.0 -
	AAtrex	1.5	lb ai/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
3	Impact Core	1.12	lb ai/a	B	100.0 -	100.0 -	86.3 a	92.0 a	100.0 -	100.0 -
	Impact	0.0109	lb ai/a	B						
	AAtrex	1.5	lb ai/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
4	Impact Core	1.68	lb ai/a	B	100.0 -	100.0 -	84.5 a	98.8 a	100.0 -	100.0 -
	AAtrex	1.5	lb ai/a	B						
	Roundup PowerMax	1	lb ae/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
5	Impact Core	1.68	lb ai/a	B	100.0 -	100.0 -	90.0 a	100.0 a	101.4 -	100.0 -
	Hornet	0.128	lb ai/a	B						
	Roundup PowerMax	1	lb ae/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
6	Sinate	0.56	lb ai/a	B	100.0 -	99.0 -	89.3 a	100.0 a	100.0 -	100.0 -
	AAtrex	1.5	lb ai/a	B						
	Dual II Magnum	1.27	lb ai/a	B						
	methylated seed oil	1	% v/v	B						
	ammonium sulfate	3	lb/a	B						
7	Dual II Magnum	1.6	lb ai/a	A	100.0 -	100.0 -	53.8 ab	45.5 b	96.4 -	100.0 -
	Impact Core	1.12	lb ai/a	C						
	AAtrex	0.5	lb ai/a	C						
	methylated seed oil	0.5	% v/v	C						
	ammonium sulfate	2.5	lb/a	C						
8	Dual II Magnum	1.6	lb ai/a	A	97.5 -	95.8 -	31.8 b	96.8 a	96.1 -	100.0 -
	Impact	0.0219	lb ai/a	C						
	AAtrex	0.5	lb ai/a	C						
	methylated seed oil	0.5	% v/v	C						
	ammonium sulfate	2.5	lb/a	C						
9	Dual II Magnum	1.6	lb ai/a	A	100.0 -	100.0 -	87.0 a	100.0 a	75.0 -	100.0 -
	Sinate	0.48	lb ai/a	C						
	AAtrex	0.5	lb ai/a	C						
	methylated seed oil	1	% v/v	C						
	ammonium sulfate	3	lb/a	C						

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 3=3.7; 21=3.9; 34,36=3.6
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,3,12,13,17,18,23,35 because error mean square = 0.
^Calculated from residual.

University of Maryland

Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	29*	30*	31*	32*	34*	35*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				ABUTH	CHEAL	IPOSS	SETFA	ABUTH	CHEAL
	Pest Name				velvetleaf	common lambsqua>	Morning glory	Giant foxtail	velvetleaf	common lambsqua>
	Crop Type, Code									
	Crop Name									
	Rating Date				Jul-11-2022	Jul-11-2022	Jul-11-2022	Jul-11-2022	Jul-18-2022	Jul-18-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-13-2022	Jul-13-2022	Jul-13-2022	Jul-13-2022	Jul-25-2022	Jul-25-2022
	Days After First/Last Applic.				52, 20	52, 20	52, 20	52, 20	59, 27	59, 27
	Days After Emergence				46 DE-1	46 DE-1	46 DE-1	46 DE-1	53 DE-1	53 DE-1
	ARM Action Codes									
10	Dual II Magnum	1.6	lb ai/a	A	100.0 -	100.0 -	23.8 b	100.0 a	100.0 -	100.0 -
	Impact	0.0328	lb ai/a	D						
	methylated seed oil	1	% v/v	D						
	ammonium sulfate	3	lb/a	D						
	LSD P=.05				2.43	4.29	27.07	18.18	25.69	.
	Standard Deviation				1.67	2.94	18.55	12.46	17.47	0.00
	CV				1.67	2.95	26.42	13.61	18.1	0.0
	Grand Mean				99.72	99.42	70.22	91.56	96.52	100.00
	Levene's F^				0.681	0.696	1.043	8.056*	0.60	.
	Levene's Prob(F)				0.704	0.692	0.43	0.00*	0.768	.
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				0.5639*	0.6665*	0.9739	0.8216*	0.6448*	.
	P(Shapiro-Wilk)^				0.0*	0.0*	0.5408	0.0*	0.0*	.
	Skewness^				-2.9835*	-2.809*	-0.346	-0.7068	-2.6667*	.
	P(Skewness)^				0.0*	0.0*	0.403	0.0926	0.0*	.
	Kurtosis^				15.913*	14.1112*	1.6253*	6.5126*	13.1922*	.
	P(Kurtosis)^				0.0*	0.0*	0.0498*	0.0*	0.0*	.
	Replicate F				1.000	0.836	1.071	1.838	1.355	0.000
	Replicate Prob(F)				0.4098	0.4874	0.3801	0.1672	0.2837	1.0000
	Treatment F				1.000	0.927	8.205	8.005	0.890	0.000
	Treatment Prob(F)				0.4613	0.5123	0.0001	0.0001	0.5411	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 3=3.7; 21=3.9; 34,36=3.6
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,3,12,13,17,18,23,35 because error mean square = 0.
^Calculated from residual.

University of Maryland

Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	36*	37*	38*	40*	41*	42*
	Pest Type					W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				SMARTWEE	IPOSS	SETFA	CHEAL	IPOSS	SOLCA
	Pest Name					Morning glory	Giant foxtail	common lambsqua>	Morning glory	Carolina horse >
	Crop Type, Code									
	Crop Name									
	Rating Date				Jul-18-2022	Jul-18-2022	Jul-18-2022	Jul-26-2022	Jul-26-2022	Jul-26-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-25-2022	Jul-25-2022	Jul-25-2022	Jul-26-2022	Jul-26-2022	Jul-26-2022
	Days After First/Last Applic.				59, 27	59, 27	59, 27	67, 35	67, 35	67, 35
	Days After Emergence				53 DE-1	53 DE-1	53 DE-1	61 DE-1	61 DE-1	61 DE-1
	ARM Action Codes									
1	untreated				0.0	0.0	0.0	0.0	0.0	0.0
2	Impact Core	1.68	lb ai/a	B	93.8 -	88.5 -	89.8 -	100.0 -	89.8 a	75.0 -
	AAtrex	1.5	lb ai/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
3	Impact Core	1.12	lb ai/a	B	94.0 -	87.5 -	90.8 -	98.3 -	86.0 a	80.0 -
	Impact	0.0109	lb ai/a	B						
	AAtrex	1.5	lb ai/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
4	Impact Core	1.68	lb ai/a	B	92.0 -	86.5 -	87.5 -	97.8 -	80.0 a	75.0 -
	AAtrex	1.5	lb ai/a	B						
	Roundup PowerMax	1	lb ae/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
5	Impact Core	1.68	lb ai/a	B	91.5 -	67.5 -	70.8 -	100.0 -	91.3 a	85.0 -
	Hornet	0.128	lb ai/a	B						
	Roundup PowerMax	1	lb ae/a	B						
	methylated seed oil	0.5	% v/v	B						
	ammonium sulfate	2.5	lb/a	B						
6	Sinate	0.56	lb ai/a	B	79.3 -	67.0 -	74.8 -	97.3 -	93.5 a	91.3 -
	AAtrex	1.5	lb ai/a	B						
	Dual II Magnum	1.27	lb ai/a	B						
	methylated seed oil	1	% v/v	B						
	ammonium sulfate	3	lb/a	B						
7	Dual II Magnum	1.6	lb ai/a	A	76.0 -	77.3 -	83.8 -	98.5 -	18.8 b	100.0 -
	Impact Core	1.12	lb ai/a	C						
	AAtrex	0.5	lb ai/a	C						
	methylated seed oil	0.5	% v/v	C						
	ammonium sulfate	2.5	lb/a	C						
8	Dual II Magnum	1.6	lb ai/a	A	98.9 -	66.8 -	70.5 -	98.5 -	35.0 b	71.3 -
	Impact	0.0219	lb ai/a	C						
	AAtrex	0.5	lb ai/a	C						
	methylated seed oil	0.5	% v/v	C						
	ammonium sulfate	2.5	lb/a	C						
9	Dual II Magnum	1.6	lb ai/a	A	88.5 -	82.3 -	94.5 -	97.3 -	89.3 a	92.5 -
	Sinate	0.48	lb ai/a	C						
	AAtrex	0.5	lb ai/a	C						
	methylated seed oil	1	% v/v	C						
	ammonium sulfate	3	lb/a	C						

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,3,12,13,17,18,23,35 because error mean square = 0.
^Calculated from residual.

University of Maryland

Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	36*	37*	38*	40*	41*	42*
	Pest Type					W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				SMARTWEE	IPOSS	SETFA	CHEAL	IPOSS	SOLCA
	Pest Name					Morning glory	Giant foxtail	common lambsqua>	Morning glory	Carolina horse >
	Crop Type, Code									
	Crop Name									
	Rating Date				Jul-18-2022	Jul-18-2022	Jul-18-2022	Jul-26-2022	Jul-26-2022	Jul-26-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-25-2022	Jul-25-2022	Jul-25-2022	Jul-26-2022	Jul-26-2022	Jul-26-2022
	Days After First/Last Applic.				59, 27	59, 27	59, 27	67, 35	67, 35	67, 35
	Days After Emergence				53 DE-1	53 DE-1	53 DE-1	61 DE-1	61 DE-1	61 DE-1
	ARM Action Codes									
10	Dual II Magnum	1.6	lb ai/a	A	100.5 -	67.3 -	62.5 -	90.0 -	15.0 b	92.5 -
	Impact	0.0328	lb ai/a	D						
	methylated seed oil	1	% v/v	D						
	ammonium sulfate	3	lb/a	D						
	LSD P=.05				31.07	45.63	45.11	7.44	31.77	31.21
	Standard Deviation				21.13	31.27	30.91	5.10	21.77	21.39
	CV				23.52	40.75	38.39	5.23	32.74	25.25
	Grand Mean				89.82	76.72	80.53	97.50	66.50	84.72
	Levene's F^				0.785	0.824	0.674	1.682	1.629	0.643
	Levene's Prob(F)				0.621	0.589	0.71	0.149	0.163	0.735
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				0.8466*	0.8427*	0.8674*	0.825*	0.9379*	0.9455
	P(Shapiro-Wilk)^				0.0003*	0.0001*	0.0005*	0.0*	0.0437*	0.0756
	Skewness^				-1.6425*	-1.4519*	-1.318*	-1.8211*	0.8938*	-0.9927*
	P(Skewness)^				0.0005*	0.0011*	0.0027*	0.0*	0.0355*	0.0204*
	Kurtosis^				4.2568*	2.0331*	1.8018*	8.8389*	1.234	2.3753*
	P(Kurtosis)^				0.0*	0.0156*	0.0306*	0.0*	0.1318	0.0053*
	Replicate F				0.985	0.353	0.858	1.555	0.963	2.447
	Replicate Prob(F)				0.4189	0.7877	0.4761	0.2262	0.4263	0.0884
	Treatment F				0.509	0.384	0.522	1.375	9.374	0.863
	Treatment Prob(F)				0.8362	0.9188	0.8279	0.2567	0.0001	0.5595

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Untreated treatment(s) 1 excluded from analysis.
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^Calculated from residual.

University of Maryland

Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	43*	45*	46*	47*	50*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	
	Pest Code				SETFA	CHEAL	IPOSS	SETFA	
	Pest Name				Giant foxtail	common lambsqua>	Morning glory	Giant foxtail	
	Crop Type, Code								C, ZEAMD
	Crop Name								Dent corn
	Rating Date				Jul-26-2022	Aug-2-2022	Aug-2-2022	Aug-2-2022	Oct-12-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	YIELD
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	BU, -, -
	Data Entry Date				Jul-26-2022	Aug-3-2022	Aug-3-2022	Aug-3-2022	
	Days After First/Last Applic.				67, 35	74, 42	74, 42	74, 42	145, 113
	Days After Emergence				61 DE-1	68 DE-1	68 DE-1	68 DE-1	139 DE-1
	ARM Action Codes								TY1
1	untreated				0.0	0.0	0.0	0.0	169.0
2	Impact Core	1.68	lb ai/a	B	90.5 a	100.0 -	91.8 a	95.0 a	232.1 -
	AAtrex	1.5	lb ai/a	B					
	methylated seed oil	0.5	% v/v	B					
	ammonium sulfate	2.5	lb/a	B					
3	Impact Core	1.12	lb ai/a	B	89.3 a	99.3 -	70.3 ab	93.0 a	224.8 -
	Impact	0.0109	lb ai/a	B					
	AAtrex	1.5	lb ai/a	B					
	methylated seed oil	0.5	% v/v	B					
	ammonium sulfate	2.5	lb/a	B					
4	Impact Core	1.68	lb ai/a	B	97.5 a	98.0 -	85.0 a	98.5 a	239.0 -
	AAtrex	1.5	lb ai/a	B					
	Roundup PowerMax	1	lb ae/a	B					
	methylated seed oil	0.5	% v/v	B					
	ammonium sulfate	2.5	lb/a	B					
5	Impact Core	1.68	lb ai/a	B	99.5 a	100.0 -	94.8 a	98.8 a	239.6 -
	Hornet	0.128	lb ai/a	B					
	Roundup PowerMax	1	lb ae/a	B					
	methylated seed oil	0.5	% v/v	B					
	ammonium sulfate	2.5	lb/a	B					
6	Sinate	0.56	lb ai/a	B	99.5 a	97.5 -	95.3 a	100.0 a	233.4 -
	AAtrex	1.5	lb ai/a	B					
	Dual II Magnum	1.27	lb ai/a	B					
	methylated seed oil	1	% v/v	B					
	ammonium sulfate	3	lb/a	B					
7	Dual II Magnum	1.6	lb ai/a	A	36.3 b	100.0 -	21.8 b	38.8 b	230.0 -
	Impact Core	1.12	lb ai/a	C					
	AAtrex	0.5	lb ai/a	C					
	methylated seed oil	0.5	% v/v	C					
	ammonium sulfate	2.5	lb/a	C					
8	Dual II Magnum	1.6	lb ai/a	A	95.8 a	97.3 -	20.8 b	98.8 a	229.8 -
	Impact	0.0219	lb ai/a	C					
	AAtrex	0.5	lb ai/a	C					
	methylated seed oil	0.5	% v/v	C					
	ammonium sulfate	2.5	lb/a	C					
9	Dual II Magnum	1.6	lb ai/a	A	99.8 a	97.0 -	90.5 a	99.8 a	244.9 -
	Sinate	0.48	lb ai/a	C					
	AAtrex	0.5	lb ai/a	C					
	methylated seed oil	1	% v/v	C					
	ammonium sulfate	3	lb/a	C					

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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Due to missing data, the effective replicates used for mean comparisons are: col. 3=3.7; 21=3.9; 34,36=3.6
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University of Maryland

Evaluation of Impact Core and Sinate Herbicide in Corn

Trial ID: Corn1-22 Cooperator Trial ID:
Protocol ID: Corn1-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator:

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	43*	45*	46*	47*	50*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	
	Pest Code				SETFA	CHEAL	IPOSS	SETFA	
	Pest Name				Giant foxtail	common lambsqua>	Morning glory	Giant foxtail	
	Crop Type, Code								C, ZEAMD
	Crop Name								Dent corn
	Rating Date				Jul-26-2022	Aug-2-2022	Aug-2-2022	Aug-2-2022	Oct-12-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	YIELD
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	BU, -, -
	Data Entry Date				Jul-26-2022	Aug-3-2022	Aug-3-2022	Aug-3-2022	
	Days After First/Last Applic.				67, 35	74, 42	74, 42	74, 42	145, 113
	Days After Emergence				61 DE-1	68 DE-1	68 DE-1	68 DE-1	139 DE-1
	ARM Action Codes								TY1
10	Dual II Magnum	1.6	lb ai/a	A	98.3 a	94.5 -	20.5 b	98.8 a	222.6 -
	Impact	0.0328	lb ai/a	D					
	methylated seed oil	1	% v/v	D					
	ammonium sulfate	3	lb/a	D					
	LSD P=.05				20.05	4.22	42.51	21.37	23.58
	Standard Deviation				13.74	2.89	29.13	14.65	16.16
	CV				15.34	2.95	44.4	16.05	6.94
	Grand Mean				89.58	98.17	65.61	91.25	232.92
	Levene's F^				30.126*	0.916	0.518	65.839*	1.869
	Levene's Prob(F)				0.00*	0.519	0.832	0.00*	0.107
	Rank X2				.	.	.	.	.
	P(Rank X2)				.	.	.	.	.
	Shapiro-Wilk^				0.8322*	0.9514	0.9204*	0.7903*	0.97
	P(Shapiro-Wilk)^				0.0*	0.1161	0.013*	0.0*	0.4266
	Skewness^				0.1977	-0.8495*	0.5198	0.0326	0.4299
	P(Skewness)^				0.6315	0.0451*	0.2118	0.9369	0.3
	Kurtosis^				4.7104*	2.1252*	2.0743*	4.6782*	0.9853
	P(Kurtosis)^				0.0*	0.0118*	0.0138*	0.0*	0.2261
	Replicate F				2.238	2.252	1.002	1.611	2.592
	Replicate Prob(F)				0.1098	0.1082	0.4089	0.2130	0.0762
	Treatment F				8.797	1.635	5.538	7.328	0.802
	Treatment Prob(F)				0.0001	0.1672	0.0005	0.0001	0.6065

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 3=3.7; 21=3.9; 34,36=3.6
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,3,12,13,17,18,23,35 because error mean square = 0.
^Calculated from residual.

University of Maryland

Corn Weed Control Using Acuron Flexi and Acuron GT

Trial ID: Corn2-22 Cooperator Trial ID:
Protocol ID: Corn2-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: May-9-2022
Initiation Date: May-20-2022
Completion Date: Oct-12-2022

Trial Location
City: Queenstown **Country:** USA United States
State/Prov.: Maryland

Latitude of LL Corner °: 38.9151459 N
Longitude of LL Corner °: 76.1452628 E

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
Organization: University of Maryland
Address 1: 124 Wye Narrows Drive
Country: US **E-mail:** kvollmer@umd.edu
City: Queenstown **State/Prov:** MD **Postal Code:** 21658
Role: SPONSR sponsor
Sponsor: Syngenta
Organization: Syngenta

Crop Description
Crop 1: C ZEAMD Zea mays indentata Dent corn
Entry Date: May-23-2022 **Stage Scale:** BBCH
Variety: Brevant B12G75PWE
Attributes: Enlist, LL, RR
Planting Date: May-20-2022 **Planting Rate:** 30000 S/A
Depth: 2 IN
Rows per Plot: 4 **Planting Method:** PLANTD planted
Row Spacing: 30 IN **Planting Equipment:** FE field equipment
Emergence Date: May-26-2022
Harvest Date: Oct-12-2022 **Harvest Equipment:** ALMACO small plot combine
Harvested Width: 5 FT
% Standard Moisture: 15.5 **Harvested Length:** 25 FT

Pest Description
Pest 1 Type: W **Code:** CHEAL Chenopodium album **Entry Date:** Jun-6-2022
Common Name: common lambsquarters **Stage Scale:** BBCH
Artificial Population: N no

Pest 2 Type: W **Code:** IPOSS Ipomoea sp. **Entry Date:** Jun-6-2022
Common Name: Morning glory **Stage Scale:** BBCH

Pest 3 Type: W **Code:** DIGSA Digitaria sanguinalis **Entry Date:** Jun-6-2022
Common Name: large crabgrass **Stage Scale:** BBCH

Site and Design
Treated Plot Width: 10 FT **Site Type:** FIELD field
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2 **Tillage Type:** CONTIL conventional-till
Replications: 4 **Treatments:** 12 **Plots:** 48 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: J-05
% Sand: 20 **% OM:** 2.3 **Texture:** SIL silt loam
% Silt: 67 **Soil Name:** Mattapex-Butlertown silt loam
% Clay: 13
pH: 6.6 **CEC:** 5.3

University of Maryland

Corn Weed Control Using Acuron Flexi and Acuron GT

Trial ID: Corn2-22 Cooperator Trial ID:
Protocol ID: Corn2-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Application Description

	A	B
Application Date	May-20-2022	Jun-6-2022
Appl. Start Time	3:10 AM	12:50 PM
Appl. Stop Time	4:47 AM	2:46 AM
Application Method	SPRAY	SPRAY
Application Timing	PREPRE	POSPOS
Application Placement	BROSOI	BROADC
Applied By	Vollmer, K.	Vollmer, K.
Appl. Entry Date	May-23-2022	Jun-6-2022
Air Temperature Start, Stop	86, 86 F	77, 80 F
% Relative Humidity Start, Stop	60, 66	37, 31
Wind Velocity+Dir. Start	10 MPH, NNE	8 MPH, N
Wind Velocity+Dir. Stop	12 MPH, S	10 MPH, NW
Wind Velocity+Dir. Max	12 MPH, S	10 MPH, NW
Wet Leaves (Y/N)	N, no	N, no
Soil Moisture	SLIDRY	SLIWET
% Cloud Cover	90	0
Next Moisture Occurred On	May-20-2022	Jan-8-2023
Time to Next Moisture	0.0 HR	48.0 HR
Moisture 1 Week after Appl.	2.05 IN	0.6 IN

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale	ZEAMD, BCOR	ZEAMD, BCOR
Days after Emergence	-6	11
Stage Majority, Percent		V3, 100
Stage Minimum, Percent		V3, 100
Stage Maximum, Percent		V3, 100
Height Average		5 IN
Height Minimum, Maximum		5, 5

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	CHEAL, W, BBCH	CHEAL, W, BBCH
Stage Majority, Percent		13, -
Stage Minimum, Percent		13, -
Stage Maximum, Percent		13, -
Height Average		1 IN
Height Minimum, Maximum		1, 1
Pest 2 Code, Type, Scale	IPOSS, W, BBCH	IPOSS, W, BBCH
Stage Majority, Percent		13, -
Stage Minimum, Percent		13, -
Stage Maximum, Percent		13, -
Height Average		1 IN
Height Minimum, Maximum		1, 1
Pest 3 Code, Type, Scale	DIGSA, W, BBCH	DIGSA, W, BBCH
Stage Majority, Percent		13, -
Stage Minimum, Percent		12, -
Stage Maximum, Percent		13, -
Height Average		1 IN
Height Minimum, Maximum		1, 1

University of Maryland

Corn Weed Control Using Acuron Flexi and Acuron GT

Trial ID: Corn2-22 Cooperator Trial ID:
Protocol ID: Corn2-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Application Equipment

	A	B
Equipment Type	BACCAI	BACCAI
Operation Pressure	23 PSI	19 PSI
Nozzle Type	FLAFAN	FLAFAN
Nozzle Tip Size, Color	80002, Yellow	8003, Blue
Nozzle Spacing	18.0 IN	18.0 IN
Nozzles/Row	6.0	6.0
Boom Length	6.0 FT	
Boom Height	12.0 IN	12.0 IN
Ground Speed	3 MPH	3.5 MPH
Carrier		WATER
Application Amount	15 GAL/AC	15 GAL/AC
Mix Size	2.0 L	2.0 L
Propellant	COMCO2	COMCO2

Notes

Context	Date	By	Notes
STATUS	May-9-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-23-2022	Kurt Vollmer	Automatically added by ARM: Trial Status changed to: E: changed by (EMDVOK).
STATUS	May-23-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Planting Date entered.

University of Maryland

Corn Weed Control Using Acuron Flexi and Acuron GT

Trial ID: Corn2-22 Cooperator Trial ID:
Protocol ID: Corn2-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	5*	7*
	Pest Type					W, Weed	W, Weed	W, Weed	W, Weed	
	Pest Code					CHEAL	IPOSS	DIGSA	SETFA	
	Pest Name					common lambsqua>	Morning glory	large crabgrass	Giant foxtail	
	Crop Type, Code				C, ZEAMD					C, ZEAMD
	Crop Name				Dent corn					Dent corn
	Rating Date				Jun-6-2022	Jun-6-2022	Jun-6-2022	Jun-6-2022	Jun-6-2022	Jun-13-2022
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-7-2022	Jun-7-2022	Jun-7-2022	Jun-7-2022	Jun-7-2022	Jun-14-2022
	Rating Timing				B0	B0	B0	B0		A2
	Days After First/Last Applic.				17, 17	17, 17	17, 17	17, 17	17, 17	24, 7
	Days After Emergence				11 DE-1	11 DE-1	11 DE-1	11 DE-1	11 DE-1	18 DE-1
	ARM Action Codes									
1	untreated check				0.0	0.0	0.0	0.0	0.0	0.0
2	Bicep II Magnum	3.44	lb ai/a	A	0.0 b	100.0 -	100.0 -	100.0 a	100.0 -	0.0 -
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
3	Bicep II Magnum	3.44	lb ai/a	A	0.0 b	100.0 -	98.8 -	100.0 a	100.0 -	0.0 -
	Halex GT	2.2	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
4	Lexar EZ	2.31	lb ai/a	A	0.0 b	100.0 -	100.0 -	100.0 a	100.0 -	2.5 -
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
5	Lexar EZ	2.31	lb ai/a	A	0.0 b	100.0 -	100.0 -	100.0 a	100.0 -	0.0 -
	Halex GT	2.2	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
10	Acuron	1.29	lb ai/a	A	0.0 b	100.0 -	100.0 -	100.0 a	100.0 -	1.8 -
	Princep 4L	1	lb ai/a	A						
	Acuron	1.29	lb ai/a	B						
	Roundup PowerMax	1.13	lb ae/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
11	Corvus	0.115	lb ai/a	A	18.8 a	100.0 -	98.3 -	100.0 a	100.0 -	5.0 -
	Atrazine 4L	1	lb ae/a	A						
	Princep 4L	1	lb ai/a	A						
	Roundup PowerMax	1.13	lb ae/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
12	Atrazine 4L	1	lb ae/a	A	6.3 b	100.0 -	100.0 -	95.5 b	96.0 -	0.0 -
	Princep 4L	1	lb ai/a	A						
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
	LSD P=.05				10.72	.	2.48	2.49	2.75	4.51
	Standard Deviation				7.22	0.00	1.67	1.68	1.85	3.04
	CV				202.07	0.0	1.68	1.69	1.86	229.96
	Grand Mean				3.57	100.00	99.57	99.36	99.43	1.32
	Levene's F^				0.833	.	0.629	7.955*	9.524*	1.494
	Levene's Prob(F)				0.558	.	0.706	0.00*	0.00*	0.228
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				0.7014*	.	0.7792*	0.8113*	0.7977*	0.8571*
	P(Shapiro-Wilk)^				0.0*	.	0.0*	0.0002*	0.0*	0.0013*
	Skewness^				0.0	.	-1.9508*	-0.6002	-0.6784	1.2055*
	P(Skewness)^				1.0	.	0.0003*	0.2066	0.1551	0.015*
	Kurtosis^				6.4731*	.	5.5045*	6.428*	5.3949*	2.2191*
	P(Kurtosis)^				0.0*	.	0.0*	0.0*	0.0*	0.0208*
	Replicate F				0.000	0.000	0.650	1.000	1.000	0.128
	Replicate Prob(F)				1.0000	1.0000	0.5929	0.4155	0.4155	0.9425
	Treatment F				3.857	0.000	0.800	4.119	2.667	1.595
	Treatment Prob(F)				0.0119	1.0000	0.5823	0.0089	0.0497	0.2058

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 2,8,10,11,14,15,17,20,21,27,28,32,33 because error mean square = 0.
^Calculated from residual.

University of Maryland

Corn Weed Control Using Acuron Flexi and Acuron GT

Trial ID: Corn2-22 Cooperator Trial ID:
Protocol ID: Corn2-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	8*	9*	10*	11*	13*	14*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed		W, Weed
	Pest Code				CHEAL	IPOSS	DIGSA	SETFA		ABUTH
	Pest Name				common lambsqua>	Morning glory	large crabgrass	Giant foxtail		velvetleaf
	Crop Type, Code								C, ZEAMD	
	Crop Name								Dent corn	
	Rating Date				Jun-13-2022	Jun-13-2022	Jun-13-2022	Jun-13-2022	Jun-20-2022	Jun-20-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-14-2022	Jun-14-2022	Jun-14-2022	Jun-14-2022	Jun-20-2022	Jun-20-2022
	Rating Timing				A2	A2	A2	A2		
	Days After First/Last Applic.				24, 7	24, 7	24, 7	24, 7	31, 14	31, 14
	Days After Emergence				18 DE-1	18 DE-1	18 DE-1	18 DE-1	25 DE-1	25 DE-1
	ARM Action Codes									
1	untreated check				0.0	0.0	0.0	0.0	0.0	0.0
2	Bicep II Magnum	3.44	lb ai/a	A	100.0 -	100.0 -	100.0 -	100.0 -	0.0 -	100.0 -
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
3	Bicep II Magnum	3.44	lb ai/a	A	100.0 -	99.5 -	100.0 -	100.0 -	0.0 -	100.0 -
	Halex GT	2.2	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
4	Lexar EZ	2.31	lb ai/a	A	100.0 -	100.0 -	100.0 -	100.0 -	1.3 -	100.0 -
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
5	Lexar EZ	2.31	lb ai/a	A	100.0 -	99.5 -	100.0 -	100.0 -	0.0 -	100.0 -
	Halex GT	2.2	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
10	Acuron	1.29	lb ai/a	A	100.0 -	100.0 -	100.0 -	100.0 -	0.0 -	100.0 -
	Princep 4L	1	lb ai/a	A						
	Acuron	1.29	lb ai/a	B						
	Roundup PowerMax	1.13	lb ae/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
11	Corvus	0.115	lb ai/a	A	100.0 -	100.0 -	100.0 -	100.0 -	1.8 -	100.0 -
	Atrazine 4L	1	lb ae/a	A						
	Princep 4L	1	lb ai/a	A						
	Roundup PowerMax	1.13	lb ae/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
12	Atrazine 4L	1	lb ae/a	A	100.0 -	100.0 -	100.0 -	100.0 -	0.0 -	100.0 -
	Princep 4L	1	lb ai/a	A						
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
	LSD P=.05				.	0.82	.	.	2.48	.
	Standard Deviation				0.00	0.55	0.00	0.00	1.67	0.00
	CV				0.0	0.55	0.0	0.0	389.17	0.0
	Grand Mean				100.00	99.86	100.00	100.00	0.43	100.00
	Levene's F^				.	0.631	.	.	0.629	.
	Levene's Prob(F)				.	0.704	.	.	0.706	.
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				.	0.7529*	.	.	0.7792*	.
	P(Shapiro-Wilk)^				.	0.0*	.	.	0.0*	.
	Skewness^				.	-1.8961*	.	.	1.9508*	.
	P(Skewness)^				.	0.0004*	.	.	0.0003*	.
	Kurtosis^				.	4.8758*	.	.	5.5045*	.
	P(Kurtosis)^				.	0.0*	.	.	0.0*	.
	Replicate F				0.000	0.632	0.000	0.000	0.650	0.000
	Replicate Prob(F)				1.0000	0.6041	1.0000	1.0000	0.5929	1.0000
	Treatment F				0.000	0.789	0.000	0.000	0.800	0.000
	Treatment Prob(F)				1.0000	0.5897	1.0000	1.0000	0.5823	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 2,8,10,11,14,15,17,20,21,27,28,32,33 because error mean square = 0.
^Calculated from residual.

University of Maryland

Corn Weed Control Using Acuron Flexi and Acuron GT

Trial ID: Corn2-22 Cooperator Trial ID:
Protocol ID: Corn2-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	15*	16*	17*	18*	20*	21*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				CHEAL	IPOSS	SETFA	CYPES	ABUTH	CHEAL
	Pest Name				common lambsqua>	Morning glory	Giant foxtail	Yellow nutsedge	velvetleaf	common lambsqua>
	Crop Type, Code									
	Crop Name									
	Rating Date				Jun-20-2022	Jun-20-2022	Jun-20-2022	Jun-20-2022	Jun-27-2022	Jun-27-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-20-2022	Jun-20-2022	Jun-20-2022	Jun-20-2022	Jul-5-2022	Jul-5-2022
	Rating Timing									
	Days After First/Last Applic.				31, 14	31, 14	31, 14	31, 14	38, 21	38, 21
	Days After Emergence				25 DE-1	25 DE-1	25 DE-1	25 DE-1	32 DE-1	32 DE-1
	ARM Action Codes									
1	untreated check				0.0	0.0	0.0	0.0	0.0	0.0
2	Bicep II Magnum	3.44	lb ai/a	A	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
3	Bicep II Magnum	3.44	lb ai/a	A	100.0 -	99.5 -	100.0 -	100.0 -	100.0 -	100.0 -
	Halex GT	2.2	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
4	Lexar EZ	2.31	lb ai/a	A	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
5	Lexar EZ	2.31	lb ai/a	A	100.0 -	99.8 -	100.0 -	100.0 -	100.0 -	100.0 -
	Halex GT	2.2	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
10	Acuron	1.29	lb ai/a	A	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -
	Princep 4L	1	lb ai/a	A						
	Acuron	1.29	lb ai/a	B						
	Roundup PowerMax	1.13	lb ae/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
11	Corvus	0.115	lb ai/a	A	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -
	Atrazine 4L	1	lb ae/a	A						
	Princep 4L	1	lb ai/a	A						
	Roundup PowerMax	1.13	lb ae/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
12	Atrazine 4L	1	lb ae/a	A	100.0 -	100.0 -	100.0 -	96.3 -	100.0 -	100.0 -
	Princep 4L	1	lb ai/a	A						
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
	LSD P=.05				.	0.64	.	2.69	.	.
	Standard Deviation				0.00	0.43	0.00	1.81	0.00	0.00
	CV				0.0	0.43	0.0	1.82	0.0	0.0
	Grand Mean				100.00	99.89	100.00	99.46	100.00	100.00
	Levene's F^				.	0.623	.	5.357*	.	.
	Levene's Prob(F)				.	0.71	.	0.002*	.	.
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				.	0.7762*	.	0.7642*	.	.
	P(Shapiro-Wilk)^				.	0.0*	.	0.0*	.	.
	Skewness^				.	-2.0887*	.	-1.065*	.	.
	P(Skewness)^				.	0.0001*	.	0.0296*	.	.
	Kurtosis^				.	7.0513*	.	6.7684*	.	.
	P(Kurtosis)^				.	0.0*	.	0.0*	.	.
	Replicate F				0.000	0.702	0.000	1.000	0.000	0.000
	Replicate Prob(F)				1.0000	0.5630	1.0000	0.4155	1.0000	1.0000
	Treatment F				0.000	0.830	0.000	2.455	0.000	0.000
	Treatment Prob(F)				1.0000	0.5622	1.0000	0.0652	1.0000	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 2,8,10,11,14,15,17,20,21,27,28,32,33 because error mean square = 0.
^Calculated from residual.

University of Maryland

Corn Weed Control Using Acuron Flexi and Acuron GT

Trial ID: Corn2-22 Cooperator Trial ID:
Protocol ID: Corn2-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	22*	23*	24*	26*	27*
	Pest Type				W, Weed	W, Weed	W, Weed		W, Weed
	Pest Code				IPOSS	SETFA	CYPES		ABUTH
	Pest Name				Morning glory	Giant foxtail	Yellow nutsedge		velvetleaf
	Crop Type, Code							C, ZEAMD	
	Crop Name							Dent corn	
	Rating Date				Jun-27-2022	Jun-27-2022	Jun-27-2022	Jul-5-2022	Jul-5-2022
	Rating Type				CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022
	Rating Timing								
	Days After First/Last Applic.				38, 21	38, 21	38, 21	46, 29	46, 29
	Days After Emergence				32 DE-1	32 DE-1	32 DE-1	40 DE-1	40 DE-1
	ARM Action Codes								
1	untreated check				0.0	0.0	0.0	0.0	0.0
2	Bicep II Magnum	3.44	lb ai/a	A	97.8 -	99.5 -	100.0 -	0.0 -	100.0 -
	Acuron GT	2.02	lb ai/a	B					
	N-Pak AMS	2.5	% v/v	B					
	nonionic surfactant	0.25	% v/v	B					
3	Bicep II Magnum	3.44	lb ai/a	A	93.3 -	100.0 -	98.3 -	0.0 -	100.0 -
	Halex GT	2.2	lb ai/a	B					
	N-Pak AMS	2.5	% v/v	B					
	nonionic surfactant	0.25	% v/v	B					
4	Lexar EZ	2.31	lb ai/a	A	94.3 -	100.0 -	100.0 -	0.0 -	100.0 -
	Acuron GT	2.02	lb ai/a	B					
	N-Pak AMS	2.5	% v/v	B					
	nonionic surfactant	0.25	% v/v	B					
5	Lexar EZ	2.31	lb ai/a	A	97.0 -	99.0 -	100.0 -	0.0 -	100.0 -
	Halex GT	2.2	lb ai/a	B					
	N-Pak AMS	2.5	% v/v	B					
	nonionic surfactant	0.25	% v/v	B					
10	Acuron	1.29	lb ai/a	A	95.8 -	100.0 -	100.0 -	0.0 -	100.0 -
	Princep 4L	1	lb ai/a	A					
	Acuron	1.29	lb ai/a	B					
	Roundup PowerMax	1.13	lb ae/a	B					
	N-Pak AMS	2.5	% v/v	B					
	nonionic surfactant	0.25	% v/v	B					
11	Corvus	0.115	lb ai/a	A	92.8 -	97.5 -	99.5 -	5.0 -	100.0 -
	Atrazine 4L	1	lb ae/a	A					
	Princep 4L	1	lb ai/a	A					
	Roundup PowerMax	1.13	lb ae/a	B					
	N-Pak AMS	2.5	% v/v	B					
	nonionic surfactant	0.25	% v/v	B					
12	Atrazine 4L	1	lb ae/a	A	95.5 -	99.5 -	95.0 -	0.0 -	100.0 -
	Princep 4L	1	lb ai/a	A					
	Acuron GT	2.02	lb ai/a	B					
	N-Pak AMS	2.5	% v/v	B					
	nonionic surfactant	0.25	% v/v	B					
	LSD P=.05				5.10	2.54	4.52	3.24	.
	Standard Deviation				3.43	1.71	3.04	2.18	0.00
	CV				3.6	1.72	3.07	305.51	0.0
	Grand Mean				95.18	99.36	98.96	0.71	100.00
	Levene's F^				0.87	1.537	1.333	1487434641802170000000000000000000.00*	.
	Levene's Prob(F)				0.533	0.215	0.287	0.00*	.
	Rank X2				.	.	.	.	.
	P(Rank X2)				.	.	.	.	.
	Shapiro-Wilk^				0.9817	0.8789*	0.8346*	0.7918*	.
	P(Shapiro-Wilk)^				0.8883	0.0038*	0.0005*	0.0*	.
	Skewness^				-0.3428	-1.3716*	-1.6668*	0.0	.
	P(Skewness)^				0.4662	0.0064*	0.0013*	1.0	.
	Kurtosis^				-0.3094	4.4262*	5.6136*	2.8592*	.
	P(Kurtosis)^				0.7347	0.0*	0.0*	0.0038*	.
	Replicate F				5.750	0.962	0.838	1.000	0.000
	Replicate Prob(F)				0.0061	0.4321	0.4907	0.4155	1.0000
	Treatment F				1.181	1.109	1.499	3.000	0.000
	Treatment Prob(F)				0.3597	0.3955	0.2343	0.0327	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 2,8,10,11,14,15,17,20,21,27,28,32,33 because error mean square = 0.
^Calculated from residual.

University of Maryland

Corn Weed Control Using Acuron Flexi and Acuron GT

Trial ID: Corn2-22 Cooperator Trial ID:
Protocol ID: Corn2-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	28*	29*	30*	32*	33*	34*	35*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				ABUTH	IPOSS	SETFA	ABUTH	CHEAL	IPOSS	SETFA
	Pest Name				velvetleaf	Morning glory	Giant foxtail	velvetleaf	common lambsqua>	Morning glory	Giant foxtail
	Crop Type, Code										
	Crop Name										
	Rating Date				Jul-5-2022	Jul-5-2022	Jul-5-2022	Aug-1-2022	Aug-1-2022	Aug-1-2022	Aug-1-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-5-2022	Jul-5-2022	Jul-5-2022	Aug-3-2022	Aug-3-2022	Aug-3-2022	Aug-3-2022
	Rating Timing										
	Days After First/Last Applic.				46, 29	46, 29	46, 29	73, 56	73, 56	73, 56	73, 56
	Days After Emergence				40 DE-1	40 DE-1	40 DE-1	67 DE-1	67 DE-1	67 DE-1	67 DE-1
	ARM Action Codes										
1	untreated check				0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Bicep II Magnum	3.44	lb ai/a	A	100.0 -	100.0 -	100.0 a	100.0 -	100.0 -	98.3 a	97.5 a
	Acuron GT	2.02	lb ai/a	B							
	N-Pak AMS	2.5	% v/v	B							
	nonionic surfactant	0.25	% v/v	B							
3	Bicep II Magnum	3.44	lb ai/a	A	100.0 -	93.0 -	100.0 a	100.0 -	100.0 -	88.8 b	97.3 a
	Halex GT	2.2	lb ai/a	B							
	N-Pak AMS	2.5	% v/v	B							
	nonionic surfactant	0.25	% v/v	B							
4	Lexar EZ	2.31	lb ai/a	A	100.0 -	94.8 -	100.0 a	100.0 -	100.0 -	94.3 ab	99.5 a
	Acuron GT	2.02	lb ai/a	B							
	N-Pak AMS	2.5	% v/v	B							
	nonionic surfactant	0.25	% v/v	B							
5	Lexar EZ	2.31	lb ai/a	A	100.0 -	96.3 -	100.0 a	100.0 -	100.0 -	95.3 ab	97.8 a
	Halex GT	2.2	lb ai/a	B							
	N-Pak AMS	2.5	% v/v	B							
	nonionic surfactant	0.25	% v/v	B							
10	Acuron	1.29	lb ai/a	A	100.0 -	96.8 -	100.0 a	100.0 -	100.0 -	96.0 ab	97.3 a
	Princep 4L	1	lb ai/a	A							
	Acuron	1.29	lb ai/a	B							
	Roundup PowerMax	1.13	lb ae/a	B							
	N-Pak AMS	2.5	% v/v	B							
	nonionic surfactant	0.25	% v/v	B							
11	Corvus	0.115	lb ai/a	A	100.0 -	91.3 -	96.0 b	100.0 -	100.0 -	90.5 ab	87.5 b
	Atrazine 4L	1	lb ae/a	A							
	Princep 4L	1	lb ai/a	A							
	Roundup PowerMax	1.13	lb ae/a	B							
	N-Pak AMS	2.5	% v/v	B							
	nonionic surfactant	0.25	% v/v	B							
12	Atrazine 4L	1	lb ae/a	A	100.0 -	97.3 -	100.0 a	100.0 -	100.0 -	95.0 ab	96.8 a
	Princep 4L	1	lb ai/a	A							
	Acuron GT	2.02	lb ai/a	B							
	N-Pak AMS	2.5	% v/v	B							
	nonionic surfactant	0.25	% v/v	B							
	LSD P=.05				.	6.05	1.03	.	.	5.91	3.26
	Standard Deviation				0.00	4.07	0.69	0.00	0.00	3.98	2.19
	CV				0.0	4.26	0.69	0.0	0.0	4.23	2.28
	Grand Mean				100.00	95.61	99.43	100.00	100.00	94.00	96.21
	Levene's F^				.	0.689	16.071*	.	.	0.272	0.40
	Levene's Prob(F)				.	0.661	0.00*	.	.	0.944	0.87
	Rank X2				.	.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.	.
	Shapiro-Wilk^				.	0.9763	0.8406*	.	.	0.9134*	0.9638
	P(Shapiro-Wilk)^				.	0.7539	0.0006*	.	.	0.0239*	0.4265
	Skewness^				.	-0.188	0.0	.	.	-0.429	-0.5346
	P(Skewness)^				.	0.6884	1.0	.	.	0.3631	0.2591
	Kurtosis^				.	0.1433	5.0998*	.	.	-1.09	-0.0969
	P(Kurtosis)^				.	0.8752	0.0*	.	.	0.2382	0.9154
	Replicate F				0.000	1.882	1.000	0.000	0.000	3.469	1.473
	Replicate Prob(F)				1.0000	0.1688	0.4155	1.0000	1.0000	0.0380	0.2554
	Treatment F				0.000	2.021	19.200	0.000	0.000	2.714	12.895
	Treatment Prob(F)				1.0000	0.1156	0.0001	1.0000	1.0000	0.0467	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 2,8,10,11,14,15,17,20,21,27,28,32,33 because error mean square = 0.
^Calculated from residual.

University of Maryland

Corn Weed Control Using Acuron Flexi and Acuron GT

Trial ID: Corn2-22 Cooperator Trial ID:
Protocol ID: Corn2-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	38*
	Pest Type				
	Pest Code				
	Pest Name				
	Crop Type, Code				C, ZEAMD
	Crop Name				Dent corn
	Rating Date				Oct-12-2022
	Rating Type				YIELD
	Rating Unit/Min/Max				BU, -, -
	Data Entry Date				
	Rating Timing				
	Days After First/Last Applic.				145, 128
	Days After Emergence				139 DE-1
	ARM Action Codes				TY1
1	untreated check				125.4 b
2	Bicep II Magnum	3.44	lb ai/a	A	229.8 a
	Acuron GT	2.02	lb ai/a	B	
	N-Pak AMS	2.5	% v/v	B	
	nonionic surfactant	0.25	% v/v	B	
3	Bicep II Magnum	3.44	lb ai/a	A	224.4 a
	Halex GT	2.2	lb ai/a	B	
	N-Pak AMS	2.5	% v/v	B	
	nonionic surfactant	0.25	% v/v	B	
4	Lexar EZ	2.31	lb ai/a	A	217.3 a
	Acuron GT	2.02	lb ai/a	B	
	N-Pak AMS	2.5	% v/v	B	
	nonionic surfactant	0.25	% v/v	B	
5	Lexar EZ	2.31	lb ai/a	A	223.3 a
	Halex GT	2.2	lb ai/a	B	
	N-Pak AMS	2.5	% v/v	B	
	nonionic surfactant	0.25	% v/v	B	
10	Acuron	1.29	lb ai/a	A	220.3 a
	Princep 4L	1	lb ai/a	A	
	Acuron	1.29	lb ai/a	B	
	Roundup PowerMax	1.13	lb ae/a	B	
	N-Pak AMS	2.5	% v/v	B	
	nonionic surfactant	0.25	% v/v	B	
11	Corvus	0.115	lb ai/a	A	215.1 a
	Atrazine 4L	1	lb ae/a	A	
	Princep 4L	1	lb ai/a	A	
	Roundup PowerMax	1.13	lb ae/a	B	
	N-Pak AMS	2.5	% v/v	B	
	nonionic surfactant	0.25	% v/v	B	
12	Atrazine 4L	1	lb ae/a	A	227.2 a
	Princep 4L	1	lb ai/a	A	
	Acuron GT	2.02	lb ai/a	B	
	N-Pak AMS	2.5	% v/v	B	
	nonionic surfactant	0.25	% v/v	B	
	LSD P=.05				20.31
	Standard Deviation				13.77
	CV				6.46
	Grand Mean				213.04
	Levene's F^				1.598
	Levene's Prob(F)				0.186
	Rank X2				.
	P(Rank X2)				.
	Shapiro-Wilk^				0.9202*
	P(Shapiro-Wilk)^				0.024*
	Skewness^				0.2381
	P(Skewness)^				0.5928
	Kurtosis^				2.4303*
	P(Kurtosis)^				0.0083*
	Replicate F				3.423
	Replicate Prob(F)				0.0370
	Treatment F				19.869
	Treatment Prob(F)				0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 2,8,10,11,14,15,17,20,21,27,28,32,33 because error mean square = 0.
^Calculated from residual.

University of Maryland

Coyote for Weed Management in Corn

Trial ID: Corn3-22 Cooperator Trial ID:
Protocol ID: Corn3-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: UPL
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: May-9-2022
Initiation Date: May-20-2022
Completion Date: Oct-12-2022

Trial Location
City: Queenstown **Country:** United States
State/Prov.: Maryland
Postal Code: 21658

Latitude of LL Corner °: 38.9150054 N
Longitude of LL Corner °: 76.1456192 E

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
Organization: University of Maryland
Address 1: 124 Wye Narrows Drive
Country: USA United States **E-mail:** kvollmer@umd.edu
City: Queenstown **State/Prov:** MD **Postal Code:** 21658
Role: SPONSR sponsor
Sponsor: UPL

Crop Description
Crop 1: C ZEAMD Zea mays indentata Dent corn
Entry Date: May-23-2022 **Stage Scale:** BBCH
Variety: Brevant B12G75PWE
Attributes: Enlist, LL, RR
Planting Date: May-20-2022 **Planting Rate:** 30000 S/A
Depth: 2 IN
Rows per Plot: 4
Row Spacing: 30 IN
Emergence Date: May-26-2022
Harvest Date: Oct-12-2022 **Harvest Equipment:** ALMACO small plot combine
Harvested Width: 5 FT
Harvested Length: 25 FT

Pest Description
Pest 1 Type: W **Code:** IPOHE Ipomoea hederacea **Entry Date:** Jun-1-2022
Common Name: ivy-leaf morning glory **Stage Scale:** BBCH
Artificial Population: N no

Pest 2 Type: W **Code:** DIGSA Digitaria sanguinalis **Entry Date:** Jun-1-2022
Common Name: large crabgrass **Stage Scale:** BBCH
Artificial Population: N no

Pest 3 Type: W **Code:** CHEAL Chenopodium album **Entry Date:** Jun-6-2022
Common Name: common lambsquarters **Stage Scale:** BBCH
Artificial Population: N no

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2
Replications: 4 **Treatments:** 5 **Plots:** 20 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: J-05
% Sand: 20 **% OM:** 2.3 **Texture:** SIL silt loam
% Silt: 67 **Soil Name:** Mattapex-Butlertown silt loam
% Clay: 13
pH: 6.2 **CEC:** 5.8

University of Maryland

Coyote for Weed Management in Corn

Trial ID: Corn3-22 Cooperator Trial ID:
Protocol ID: Corn3-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: UPL
Investigator (Creator): Kurt Vollmer

Application Description

	A	B	C
Application Date	May-20-2022	Jun-6-2022	Jun-15-2022
Appl. Start Time	3:10 AM	12:50 PM	9:15 AM
Appl. Stop Time	4:47 AM	2:46 AM	9:35 AM
Application Method	SPRAY	SPRAY	SPRAY
Application Timing	PREPRE	POSPOS	POSPOS
Application Placement	BROSOI	BROADC	BROADC
Applied By	Vollmer, K.	Vollmer, K.	Vollmer. K.
Appl. Entry Date	May-23-2022	Jun-6-2022	Jun-15-2022
Air Temperature Start, Stop	86, 86 F	77, 80 F	75, 76 F
% Relative Humidity Start, Stop	60, 66	37, 31	85, 80
Wind Velocity+Dir. Start	10 MPH, NNE	8 MPH, N	2 MPH, SSW
Wind Velocity+Dir. Stop	12 MPH, S	10 MPH, NW	1 MPH, SSW
Wind Velocity+Dir. Max	12 MPH, S	10 MPH, NW	2.5 MPH, SSW
Wet Leaves (Y/N)	N, no	N, no	N, no
Soil Moisture	SLIDRY	SLIWET	WET
% Cloud Cover	90	0	0
Next Moisture Occurred On	May-20-2022	Jun-8-2022	Dec-16-2022
Time to Next Moisture	0.0 HR	48.0 HR	24.0 HR
Moisture 6 Hours after Appl.	0 IN	0 IN	0.36 IN
Moisture 1 Week after Appl.	2.05 IN	0.6 IN	0.99 IN
Problems with Application?	N, no	N, no	N, no

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale	ZEAMD, BCOR	ZEAMD, BCOR	ZEAMD, BCOR
Days after Emergence	-6	11	20
Height Average		5 IN	12 IN
Height Minimum, Maximum		5, 5	11, 13

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale	IPOHE, W, BBCH	IPOHE, W, BBCH	IPOHE, W, BBCH
Stage Majority, Percent		13, -	18, -
Stage Minimum, Percent		13, -	16, -
Stage Maximum, Percent		13, -	19, -
Height Average		1 IN	3.6 IN
Height Minimum, Maximum		1, 1	3, 4
Pest 2 Code, Type, Scale	DIGSA, W, BBCH	DIGSA, W, BBCH	DIGSA, W, BBCH
Stage Majority, Percent		13, -	
Stage Minimum, Percent		12, -	
Stage Maximum, Percent		13, -	
Height Average		1 IN	
Height Minimum, Maximum		1, 1	
Pest 3 Code, Type, Scale	CHEAL, W, BBCH	CHEAL, W, BBCH	CHEAL, W, BBCH
Stage Majority, Percent		13, -	16, -
Stage Minimum, Percent		13, -	16, -
Stage Maximum, Percent		13, -	16, -
Height Average		1 IN	2.6 IN
Height Minimum, Maximum		1, 1	2, 3

University of Maryland

Coyote for Weed Management in Corn

Trial ID: Corn3-22 Cooperator Trial ID:
Protocol ID: Corn3-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: UPL
Investigator (Creator): Kurt Vollmer

Application Equipment

	A	B	C
Equipment Type	BACCAI	BACCAI	BACCAI
Operation Pressure	23 PSI	19 PSI	23 PSI
Nozzle Type	FLAFAN	FLAFAN	FLAFAN
Nozzle Tip Size, Color	8002, Yellow	8003, Blue	8002, Yellow
Nozzle Spacing	18.0 -	18.0 -	18.0 -
Nozzles/Row	6.0	6.0	6.0
Boom Length	6.0 FT		6.0 FT
Boom Height	12.0 IN	12.0 IN	12.0 IN
Ground Speed	3 MPH	3.5 MPH	3 MPH
Carrier	WATER	WATER	WATER
Application Amount	15 GAL/AC	15 GAL/AC	15 GAL/AC
Mix Size	2.0 -	2.0 L	2.0 -
Propellant	COMCO2	COMCO2	COMCO2

Notes

Context	Date	By	Notes
STATUS	May-9-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-23-2022	Kurt Vollmer	Automatically added by ARM: Trial Status changed to: E: changed by (EMDVOK).
STATUS	May-23-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Planting Date entered.

University of Maryland

Coyote for Weed Management in Corn

Trial ID: Corn3-22 Cooperator Trial ID:
Protocol ID: Corn3-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: UPL
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	5*	6*
	Pest Type						W, Weed	W, Weed		W, Weed
	Pest Code						IPOSS	DIGSA		CHEAL
	Pest Name						Morning glory	large crabgrass		common lambsqua>
	Crop Type, Code				C, ZEAMD	C, ZEAMD			C, ZEAMD	
	Crop Name				Dent corn	Dent corn			Dent corn	
	Rating Date				May-27-2022	Jun-3-2022	Jun-3-2022	Jun-3-2022	Jun-13-2022	Jun-13-2022
	Rating Type				PHYGEN	PHYGEN	CONTRO	CONTRO	PHYGEN	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-1-2022	Jun-6-2022	Jun-6-2022	Jun-6-2022	Jun-14-2022	Jun-14-2022
	Days After First/Last Applic.				7, 7	14, 14	14, 14	14, 14	24, 7	24, 7
	Trt-Eval Interval				7 DA-A	14 DA-A	14 DA-A	14 DA-A		
	Days After Emergence				1 DE-1	8 DE-1	8 DE-1	8 DE-1	18 DE-1	18 DE-1
	ARM Action Codes									
1	untreated check				0.0	0.0	0.0	0.0	0.0	0.0
2	Coyote	1.84	lb ai/a	A	0.0 -	0.0 -	98.0 a	98.0 -	0.0 b	100.0 -
	Atrazine 4L	1	lb ai/a	A						
	Roundup PowerMax	1.13	lb ae/a	C						
	Atrazine 4L	0.5	lb ai/a	C						
	ammonium sulfate	2.55	lb/a	C						
3	Coyote	1.84	lb ai/a	C	0.0 -	0.0 -	-1.3	-9.8 -		
	Roundup PowerMax	1.13	lb ae/a	C						
	Atrazine 4L	1.5	lb ai/a	C						
	ammonium sulfate	2.55	lb/a	C						
4	Corvus	0.115	lb ai/a	A	0.0 -	25.0 -	99.5 a	100.0 -	12.5 a	100.0 -
	Atrazine 4L	1	lb ae/a	A						
	Princep 4L	1	lb ai/a	A						
	Roundup PowerMax	1.13	lb ae/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
5	Atrazine 4L	1	lb ae/a	A	0.0 -	0.0 -	98.5 a	72.5 -	0.0 b	100.0 -
	Princep 4L	1	lb ai/a	A						
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
	LSD P=.05				.	.	2.08	49.42	4.99	.
	Standard Deviation				0.00	0.00	1.20	28.56	2.89	0.00
	CV				0.0	0.0	1.32	34.32	69.28	0.0
	Grand Mean				0.00	7.69	91.08	83.23	4.17	100.00
	Levene's F^				.	.	0.449	0.307	0.167	.
	Levene's Prob(F)				.	.	0.724	0.82	0.849	.
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				.	.	0.9443	0.8922	0.8266*	.
	P(Shapiro-Wilk)^				.	.	0.5147	0.1047	0.0191*	.
	Skewness^				.	.	0.6418	-0.9238	-0.9381	.
	P(Skewness)^				.	.	0.3676	0.2027	0.216	.
	Kurtosis^				.	.	0.1406	1.7261	1.5278	.
	P(Kurtosis)^				.	.	0.9172	0.2169	0.2924	.
	Replicate F				0.000	0.000	10.462	0.910	1.000	0.000
	Replicate Prob(F)				1.0000	1.0000	0.0085	0.4899	0.4547	1.0000
	Treatment F				0.000	0.000	2074.829	3.834	25.000	0.000
	Treatment Prob(F)				1.0000	1.0000	0.0001	0.0759	0.0012	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 1-4=2.3
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,2,6,11,15,16,17,22,23,32 because error mean square = 0.
^Calculated from residual.

University of Maryland

Coyote for Weed Management in Corn

Trial ID: Corn3-22 Cooperator Trial ID:
Protocol ID: Corn3-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: UPL
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	7*	8*	10*	11*	12*	13*	15*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				IPOSS	SETFA		CHEAL	IPOSS	SETFA	ABUTH
	Pest Name				Morning glory	Giant foxtail		common lambsqua>	Morning glory	Giant foxtail	velvetleaf
	Crop Type, Code						C, ZEAMD				
	Crop Name						Dent corn				
	Rating Date				Jun-13-2022	Jun-13-2022	Jun-20-2022	Jun-20-2022	Jun-20-2022	Jun-20-2022	Jun-27-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-14-2022	Jun-14-2022	Jun-20-2022	Jun-20-2022	Jun-20-2022	Jun-20-2022	Jul-5-2022
	Days After First/Last Applic.				24, 7	24, 7	31, 5	31, 5	31, 5	31, 5	38, 12
	Trt-Eval Interval										
	Days After Emergence				18 DE-1	18 DE-1	25 DE-1	25 DE-1	25 DE-1	25 DE-1	32 DE-1
	ARM Action Codes										
1	untreated check				0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Coyote	1.84	lb ai/a	A	84.8 -	96.3 -	0.0 b	100.0 -	98.3 -	100.0 a	100.0 -
	Atrazine 4L	1	lb ai/a	A							
	Roundup PowerMax	1.13	lb ae/a	C							
	Atrazine 4L	0.5	lb ai/a	C							
	ammonium sulfate	2.55	lb/a	C							
3	Coyote	1.84	lb ai/a	C			0.0 b	100.0 -	98.3 -	67.5 b	100.0 -
	Roundup PowerMax	1.13	lb ae/a	C							
	Atrazine 4L	1.5	lb ai/a	C							
	ammonium sulfate	2.55	lb/a	C							
4	Corvus	0.115	lb ai/a	A	100.0 -	100.0 -	6.0 a	100.0 -	98.0 -	100.0 a	100.0 -
	Atrazine 4L	1	lb ae/a	A							
	Princep 4L	1	lb ai/a	A							
	Roundup PowerMax	1.13	lb ae/a	B							
	N-Pak AMS	2.5	% v/v	B							
	nonionic surfactant	0.25	% v/v	B							
5	Atrazine 4L	1	lb ae/a	A	98.8 -	100.0 -	0.0 b	100.0 -	99.0 -	100.0 a	100.0 -
	Princep 4L	1	lb ai/a	A							
	Acuron GT	2.02	lb ai/a	B							
	N-Pak AMS	2.5	% v/v	B							
	nonionic surfactant	0.25	% v/v	B							
	LSD P=.05				20.57	7.49	3.39	.	3.65	13.26	.
	Standard Deviation				11.89	4.33	2.12	0.00	2.28	8.29	0.00
	CV				12.58	4.38	141.42	0.0	2.32	9.02	0.0
	Grand Mean				94.50	98.75	1.50	100.00	98.38	91.88	100.00
	Levene's F^				0.315	0.167	0.758	.	1.356	0.889	.
	Levene's Prob(F)				0.738	0.849	0.539	.	0.303	0.475	.
	Rank X2				.	.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.	.
	Shapiro-Wilk^				0.8954	0.8266*	0.8813*	.	0.9455	0.8947	.
	P(Shapiro-Wilk)^				0.1385	0.0191*	0.0407*	.	0.4214	0.0662	.
	Skewness^				-0.8518	-0.9381	-0.966	.	-0.6231	0.6471	.
	P(Skewness)^				0.2584	0.216	0.1377	.	0.3277	0.3101	.
	Kurtosis^				1.3302	1.5278	3.2602*	.	-0.3725	3.0188*	.
	P(Kurtosis)^				0.3564	0.2924	0.0152*	.	0.7587	0.0228*	.
	Replicate F				0.919	1.000	1.000	0.000	0.176	1.000	0.000
	Replicate Prob(F)				0.4862	0.4547	0.4363	1.0000	0.9097	0.4363	1.0000
	Treatment F				2.029	1.000	8.000	0.000	0.144	15.364	0.000
	Treatment Prob(F)				0.2122	0.4219	0.0066	1.0000	0.9307	0.0007	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 1-4=2.3
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,2,6,11,15,16,17,22,23,32 because error mean square = 0.
^Calculated from residual.

University of Maryland

Coyote for Weed Management in Corn

Trial ID: Corn3-22 Cooperator Trial ID:
Protocol ID: Corn3-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: UPL
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	16*	17*	18*	19*	20*	22*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	
	Pest Code				AMACH	CHEAL	DATST	IPOSS	SETFA	
	Pest Name				smooth pigweed	common lambsqua>	thorn apple	Morning glory	Giant foxtail	
	Crop Type, Code									C, ZEAMD
	Crop Name									Dent corn
	Rating Date				Jun-27-2022	Jun-27-2022	Jun-27-2022	Jun-27-2022	Jun-27-2022	Jul-5-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022
	Days After First/Last Applic.				38, 12	38, 12	38, 12	38, 12	38, 12	46, 20
	Trt-Eval Interval									
	Days After Emergence				32 DE-1	32 DE-1	32 DE-1	32 DE-1	32 DE-1	40 DE-1
	ARM Action Codes									
1	untreated check				0.0	0.0	0.0	0.0	0.0	0.0
2	Coyote	1.84	lb ai/a	A	100.0 -	100.0 -	100.0 -	95.3 -	99.3 -	0.0 -
	Atrazine 4L	1	lb ai/a	A						
	Roundup PowerMax	1.13	lb ae/a	C						
	Atrazine 4L	0.5	lb ai/a	C						
	ammonium sulfate	2.55	lb/a	C						
3	Coyote	1.84	lb ai/a	C	100.0 -	100.0 -	100.0 -	95.3 -	99.0 -	0.0 -
	Roundup PowerMax	1.13	lb ae/a	C						
	Atrazine 4L	1.5	lb ai/a	C						
	ammonium sulfate	2.55	lb/a	C						
4	Corvus	0.115	lb ai/a	A	100.0 -	100.0 -	99.5 -	89.8 -	100.0 -	10.0 -
	Atrazine 4L	1	lb ae/a	A						
	Princep 4L	1	lb ai/a	A						
	Roundup PowerMax	1.13	lb ae/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
5	Atrazine 4L	1	lb ae/a	A	100.0 -	100.0 -	100.0 -	87.3 -	98.3 -	0.0 -
	Princep 4L	1	lb ai/a	A						
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
	LSD P=.05				.	.	0.80	9.84	2.01	.
	Standard Deviation				0.00	0.00	0.50	6.15	1.26	0.00
	CV				0.0	0.0	0.5	6.7	1.27	0.0
	Grand Mean				100.00	100.00	99.88	91.88	99.13	2.50
	Levene's F^				.	.	0.333	0.507	20.571*	.
	Levene's Prob(F)				.	.	0.802	0.685	0.00*	.
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				.	.	0.7152*	0.9156	0.9795	.
	P(Shapiro-Wilk)^				.	.	0.0002*	0.143	0.9595	.
	Skewness^				.	.	-1.4754*	-0.5341	-0.1543	.
	P(Skewness)^				.	.	0.0301*	0.3995	0.8056	.
	Kurtosis^				.	.	3.9194*	-0.8025	-0.3412	.
	P(Kurtosis)^				.	.	0.0049*	0.5106	0.7783	.
	Replicate F				0.000	0.000	1.000	1.112	0.263	0.000
	Replicate Prob(F)				1.0000	1.0000	0.4363	0.3942	0.8503	1.0000
	Treatment F				0.000	0.000	1.000	1.715	1.316	0.000
	Treatment Prob(F)				1.0000	1.0000	0.4363	0.2331	0.3284	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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Could not calculate LSD (% mean diff) for columns 1,2,6,11,15,16,17,22,23,32 because error mean square = 0.
^Calculated from residual.

University of Maryland

Coyote for Weed Management in Corn

Trial ID: Corn3-22 Cooperator Trial ID:
Protocol ID: Corn3-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: UPL
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	23*	24*	25*	27*	28*	29*
	Pest Type				W, Weed	W, Weed	W, Weed		W, Weed	W, Weed
	Pest Code				CHEAL	IPOSS	SETFA		CHEAL	IPOSS
	Pest Name				common lambsqua>	Morning glory	Giant foxtail		common lambsqua>	Morning glory
	Crop Type, Code							C, ZEAMD		
	Crop Name							Dent corn		
	Rating Date				Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-13-2022	Jul-13-2022	Jul-13-2022
	Rating Type				CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-14-2022	Jul-14-2022	Jul-14-2022
	Days After First/Last Applic.				46, 20	46, 20	46, 20	54, 28	54, 28	54, 28
	Trt-Eval Interval									
	Days After Emergence				40 DE-1	40 DE-1	40 DE-1	48 DE-1	48 DE-1	48 DE-1
	ARM Action Codes									
1	untreated check				0.0	0.0	0.0	0.0	0.0	0.0
2	Coyote	1.84	lb ai/a	A	100.0 -	95.5 -	96.3 -	0.0 b	98.8 -	85.0 -
	Atrazine 4L	1	lb ai/a	A						
	Roundup PowerMax	1.13	lb ae/a	C						
	Atrazine 4L	0.5	lb ai/a	C						
	ammonium sulfate	2.55	lb/a	C						
3	Coyote	1.84	lb ai/a	C	100.0 -	95.3 -	95.5 -	0.0 b	100.0 -	88.0 -
	Roundup PowerMax	1.13	lb ae/a	C						
	Atrazine 4L	1.5	lb ai/a	C						
	ammonium sulfate	2.55	lb/a	C						
4	Corvus	0.115	lb ai/a	A	100.0 -	92.3 -	98.8 -	3.8 a	99.5 -	83.8 -
	Atrazine 4L	1	lb ae/a	A						
	Princep 4L	1	lb ai/a	A						
	Roundup PowerMax	1.13	lb ae/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
5	Atrazine 4L	1	lb ae/a	A	100.0 -	89.3 -	96.0 -	0.0 b	100.0 -	79.0 -
	Princep 4L	1	lb ai/a	A						
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
	LSD P=.05				.	6.55	4.31	2.00	2.23	6.96
	Standard Deviation				0.00	4.10	2.69	1.25	1.40	4.35
	CV				0.0	4.4	2.79	133.33	1.4	5.19
	Grand Mean				100.00	93.06	96.63	0.94	99.56	83.94
	Levene's F^				.	0.377	1.188	0.333	0.333	1.068
	Levene's Prob(F)				.	0.771	0.356	0.802	0.802	0.399
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				.	0.961	0.9715	0.7152*	0.8742*	0.938
	P(Shapiro-Wilk)^				.	0.6805	0.8617	0.0002*	0.0315*	0.3249
	Skewness^				.	-0.0269	-0.0283	-1.4754*	-1.3221*	-0.0726
	P(Skewness)^				.	0.9657	0.9639	0.0301*	0.0486*	0.9078
	Kurtosis^				.	-0.8877	-0.7301	3.9194*	2.5819*	-1.1151
	P(Kurtosis)^				.	0.4674	0.5489	0.0049*	0.0466*	0.3638
	Replicate F				0.000	0.917	1.621	1.000	0.715	2.219
	Replicate Prob(F)				1.0000	0.4707	0.2523	0.4363	0.5672	0.1553
	Treatment F				0.000	2.059	1.161	9.000	0.715	2.958
	Treatment Prob(F)				1.0000	0.1761	0.3770	0.0045	0.5672	0.0903

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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^Calculated from residual.

University of Maryland

Coyote for Weed Management in Corn

Trial ID: Corn3-22 Cooperator Trial ID:
Protocol ID: Corn3-22 Location: J-05 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: UPL
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code						
Pest Type					W, Weed		W, Weed	W, Weed	W, Weed	
Pest Code					SETFA		CHEAL	IPOSS	SETFA	
Pest Name					Giant foxtail		common lambsqua>	Morning glory	Giant foxtail	
Crop Type, Code						C, ZEAMD				C, ZEAMD
Crop Name						Dent corn				Dent corn
Rating Date					Jul-13-2022	Jul-27-2022	Jul-27-2022	Jul-27-2022	Jul-27-2022	Oct-12-2022
Rating Type					CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO	YIELD
Rating Unit/Min/Max					%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	BU, -, -
Data Entry Date					Jul-14-2022	Aug-3-2022	Aug-3-2022	Aug-3-2022	Aug-3-2022	
Days After First/Last Applic.					54, 28	68, 42	68, 42	68, 42	68, 42	145, 119
Trt-Eval Interval										
Days After Emergence					48 DE-1	62 DE-1	62 DE-1	62 DE-1	62 DE-1	139 DE-1
ARM Action Codes										TY1
1	untreated check				0.0	0.0	0.0	0.0	0.0	150.7 b
2	Coyote	1.84	lb ai/a	A	91.3 -	0.0 -	92.8 b	85.8 -	89.5 -	247.8 a
	Atrazine 4L	1	lb ai/a	A						
	Roundup PowerMax	1.13	lb ae/a	C						
	Atrazine 4L	0.5	lb ai/a	C						
	ammonium sulfate	2.55	lb/a	C						
3	Coyote	1.84	lb ai/a	C	91.3 -	0.0 -	91.5 b	85.3 -	86.5 -	244.7 a
	Roundup PowerMax	1.13	lb ae/a	C						
	Atrazine 4L	1.5	lb ai/a	C						
	ammonium sulfate	2.55	lb/a	C						
4	Corvus	0.115	lb ai/a	A	96.0 -	0.0 -	96.0 ab	85.5 -	94.8 -	245.4 a
	Atrazine 4L	1	lb ae/a	A						
	Princep 4L	1	lb ai/a	A						
	Roundup PowerMax	1.13	lb ae/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
5	Atrazine 4L	1	lb ae/a	A	93.8 -	0.0 -	99.0 a	83.5 -	92.3 -	251.5 a
	Princep 4L	1	lb ai/a	A						
	Acuron GT	2.02	lb ai/a	B						
	N-Pak AMS	2.5	% v/v	B						
	nonionic surfactant	0.25	% v/v	B						
LSD P=.05					9.15	.	4.68	10.49	7.07	21.31
Standard Deviation					5.72	0.00	2.93	6.56	4.42	13.69
CV					6.15	0.0	3.09	7.71	4.87	5.88
Grand Mean					93.06	0.00	94.81	85.00	90.75	232.68
Levene's F^					0.147	.	1.653	0.982	1.254	0.331
Levene's Prob(F)					0.93	.	0.23	0.434	0.334	0.853
Rank X2					.	.	.	.	.	.
P(Rank X2)					.	.	.	.	.	.
Shapiro-Wilk^					0.9325	.	0.8978	0.982	0.9834	0.9844
P(Shapiro-Wilk)^					0.2672	.	0.0742	0.9775	0.9849	0.9812
Skewness^					0.158	.	-0.0347	-0.1903	0.0185	-0.0742
P(Skewness)^					0.801	.	0.9559	0.7616	0.9765	0.8969
Kurtosis^					-1.27	.	-1.7054	0.0296	-0.6631	-0.0432
P(Kurtosis)^					0.303	.	0.1725	0.9805	0.5858	0.9689
Replicate F					1.076	0.000	8.202	1.368	1.594	3.228
Replicate Prob(F)					0.4070	1.0000	0.0061	0.3136	0.2581	0.0648
Treatment F					0.638	0.000	5.321	0.097	2.582	29.327
Treatment Prob(F)					0.6090	1.0000	0.0220	0.9598	0.1181	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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Due to missing data, the effective replicates used for mean comparisons are: col. 1-4=2.3
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,2,6,11,15,16,17,22,23,32 because error mean square = 0.
^Calculated from residual.

University of Maryland

Efficacy of ATZ and Resicore XL tankmitures in Field Corn

Trial ID: Corn4-22 Cooperator Trial ID:
Protocol ID: Corn4-22 Location: Trial Year: 2022
Project ID: NA22T9E008H Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: May-9-2022
Initiation Date: May-20-2022
Completion Date: Oct-12-2022

Trial Location
City: Queenstown **Country:** United States
State/Prov.: Maryland
Postal Code: 21658

Latitude of LL Corner °: 38.914926 N
Longitude of LL Corner °: 76.1450227 E

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
Organization: University of Maryland
Address 1: 124 Wye Narrows Drive
Country: USA United States **E-mail:** kvollmer@umd.edu
City: Queenstown **State/Prov:** MD **Postal Code:** 21658
Organization: Corteva

Crop Description
Crop 1: C ZEAMD Zea mays indentata Dent corn
Entry Date: May-23-2022 **Stage Scale:** BBCH
Variety: Brevant
Attributes: Enlist, LL, RR
Planting Date: May-20-2022 **Planting Rate:** 30000 S/A
Depth: 2 IN
Rows per Plot: 4
Row Spacing: 30 IN
Emergence Date: May-26-2022

Pest Description
Pest 1 Type: W **Code:** IPOHE Ipomoea hederacea **Entry Date:** May-31-2022
Common Name: ivy-leaf morning glory **Stage Scale:** BBCH
Artificial Population: N no

Pest 2 Type: W **Code:** SETFA Setaria faberi **Entry Date:** May-31-2022
Common Name: Giant foxtail **Stage Scale:** BBCH
Artificial Population: N no

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2
Replications: 4 **Treatments:** 10 **Plots:** 40 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: J-05
% Sand: 20 **% OM:** 2.3 **Texture:** SIL silt loam
% Silt: 67 **Soil Name:** Mattapex-Butlertown silt loam
% Clay: 13
pH: 6.2 **CEC:** 5.8

University of Maryland

Efficacy of ATZ and Resicore XL tankmitures in Field Corn

Trial ID: Corn4-22 Cooperator Trial ID:
Protocol ID: Corn4-22 Location: Trial Year: 2022
Project ID: NA22T9E008H Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Kurt Vollmer

Application Description

	A	B	C	D
Application Date	May-20-2022	May-31-2022	Jun-13-2022	Jun-21-2022
Appl. Start Time	3:10 AM	10:30 AM	8:40 AM	2:00 PM
Appl. Stop Time	4:47 AM	10:40 AM	9:50 AM	2:30 PM
Application Method	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing	PREPRE	POSPOS	POSPOS	POSPOS
Application Placement	BROSOI	BROADC	BROADC	BROADC
Applied By	Vollmer, K.	Vollmer, K.	Vollmer, K.	Vollmer, K.
Appl. Entry Date	May-23-2022	May-31-2022	Jun-13-2022	Jun-24-2022
Air Temperature Start, Stop	86, 86 F	80, 82 F	76, 78 -	77, 77 F
% Relative Humidity Start, Stop	60, 66	81, 66	96, 92	51, 51
Wind Velocity+Dir. Start	10 MPH, NNE	4 MPH, E	1 MPH, NE	6 MPH, NE
Wind Velocity+Dir. Stop	12 MPH, S	4 MPH, E	3 MPH, NE	6 MPH, NE
Wind Velocity+Dir. Max	12 MPH, S	4 MPH, E	3 MPH, NE	10 MPH, NE
Wet Leaves (Y/N)	N, no	N, no	N, no	N, no
Soil Moisture	SLIDRY	SLIWET	SLIWET	DRY
% Cloud Cover	90	0	85	75
Next Moisture Occurred On	May-20-2022	Jul-2-2022	Jun-13-2022	Jun-22-2022
Time to Next Moisture	0.0 HR	48.0 HR	0.0 HR	24.0 HR
Moisture 1 Week after Appl.	2.05 IN	1.62 IN	1.85 IN	2.11 IN
Problems with Application?	N, no	N, no	N, no	N, no

Crop Stage At Each Application

	A	B	C	D
Crop 1 Code, BBCH Scale	ZEAMD, BCOR	ZEAMD, BCOR	ZEAMD, BCOR	ZEAMD, BCOR
Days after Emergence	-6	5	18	26
Stage Majority, Percent		13, -		
Stage Minimum, Percent		13, -		
Stage Maximum, Percent		13, -		
Height Average		2.5 IN	9.6 IN	20 IN
Height Minimum, Maximum		2, 3	9, 10	20, 20

Pest Stage At Each Application

	A	B	C	D
Pest 1 Code, Type, Scale	IPOHE, W, BBCH	IPOHE, W, BBCH	IPOHE, W, W	IPOHE, W, BBCH
Stage Majority, Percent		08, 100	15, -	13, 100
Stage Minimum, Percent		08, 100	15, -	13, 100
Stage Maximum, Percent		08, 100	15, -	13, 100
Height Average		0.5 IN	4 IN	0.5 IN
Height Minimum, Maximum		0.5, 0.5	2, 3	0.5, 0.5
Pest 2 Code, Type, Scale	SETFA, W, BBCH	SETFA, W, BBCH	SETFA, W, W	SETFA, W, BBCH
Stage Majority, Percent		10, 100	15, -	13, 100
Stage Minimum, Percent		10, 100	15, -	13, 100
Stage Maximum, Percent		10, 100	15, -	13, 100
Height Average		0.5 IN	1 IN	5.6 IN
Height Minimum, Maximum		0.5, 0.5	1, 1	2, 5

Application Equipment

	A	B	C	D
Equipment Type	BACCAI	BACCAI	BACCAI	BACCAI
Operation Pressure	23 PSI	23 PSI	14 PSI	14 PSI
Nozzle Type	FLAFAN	FLAFAN	FLAFAN	FLAFAN
Nozzle Tip Size, Color	8002, Yellow	8002, Yellow	8003, Blue	8003, Blue
Nozzle Spacing	18.0 IN	18.0 IN	20 IN	20 IN
Nozzles/Row	6.0	6.0	6.0	6.0
Boom Length	6.0 FT	6.0 FT		
Boom Height	12.0 IN	12.0 IN	12.0 IN	12.0 IN
Ground Speed	3 MPH	3 MPH	3 MPH	3 MPH
Carrier	WATER	WATER	WATER	WATER
Application Amount	15 GAL/AC	15 GAL/AC	15 GAL/AC	15 GAL/AC
Mix Size	2.0 L	2.0 L	2.0 L	2.0 L
Propellant	COMCO2	COMCO2	COMCO2	COMCO2

University of Maryland

Efficacy of ATZ and Resicore XL tankmitures in Field Corn

Trial ID: Corn4-22 Cooperator Trial ID:
Protocol ID: Corn4-22 Location: Trial Year: 2022
Project ID: NA22T9E008H Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Kurt Vollmer

Notes

Context	Date	By	Notes
STATUS	May-9-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-23-2022	Kurt Vollmer	Automatically added by ARM: Trial Status changed to: E: changed by (EMDVOK).
STATUS	May-23-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Planting Date entered.

University of Maryland

Efficacy of ATC and Resicore XL tankmitures in Field Corn

Trial ID: Corn4-22 Cooperator Trial ID:
Protocol ID: Corn4-22 Location: Trial Year: 2022
Project ID: NA22T9E008H Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	6*	7*
	Pest Type						W, Weed	W, Weed		W, Weed
	Pest Code						IPOSS	DIGSA		CHEAL
	Pest Name						Morning glory	large crabgrass		common lambsqua>
	Crop Type, Code				C, ZEAMD	C, ZEAMD			C, ZEAMD	
	Crop Name				Dent corn	Dent corn			Dent corn	
	Rating Date				May-27-2022	Jun-3-2022	Jun-3-2022	Jun-3-2022	Jun-13-2022	Jun-13-2022
	Rating Type				PHYNEC	PHYNEC	CONTRO	CONTRO	PHYNEC	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				May-27-2022	Jun-6-2022	Jun-6-2022	Jun-6-2022	Jun-14-2022	Jun-14-2022
	Days After First/Last Applic.				7, 7	14, 3	14, 3	14, 3	24, 13	24, 13
	Trt-Eval Interval				7 DA-A					
	Days After Emergence				1 DE-1	8 DE-1	8 DE-1	8 DE-1	18 DE-1	18 DE-1
1	untreated				0.0 -	0.0 b	0.0 b	0.0 b	0.0 -	0.0 -
2	Resicore XL	2.45	lb ae/a	A	0.0 -	1.3 b	100.0 a	100.0 a	0.0 -	100.0 -
	Atrazine 4L	1	lb ai/a	A						
3	Resicore XL	1.63	lb ae/a	B	0.0 -	10.0 a	97.5 a	100.0 a	1.3 -	100.0 -
	Atrazine 4L	1	lb ai/a	B						
	Durango DMA	1	lb ae/a	B						
	nonionic surfactant	0.25	% v/v	B						
	ammonium sulfate	2.5	% v/v	B						
4	Atrazine 4L	1	lb ae/a	A	0.0 -	0.0 b	77.5 a	98.8 a	0.0 -	100.0 -
	Princep 4L	1	lb ai/a	A						
	Resicore XL	1.22	lb ae/a	C						
	Atrazine 4L	1	lb ai/a	C						
	Durango DMA	1	lb ae/a	C						
	nonionic surfactant	0.25	% v/v	C						
	ammonium sulfate	2.5	% v/v	C						
7	Acuron	0.086	lb ai/gal	A	0.0 -	0.0 b	100.0 a	100.0 a	0.0 -	100.0 -
	Halex GT	1.98	lb ai/a	C						
	nonionic surfactant	0.25	% v/v	C						
	ammonium sulfate	2.5	% v/v	C						
10	Atrazine 4L	1	lb ae/a	A	0.0	0.0	100.0	99.3	1.3	100.0
	Princep 4L	1	lb ai/a	A						
	Acuron GT	2.02	lb ai/a	C						
	nonionic surfactant	0.25	% v/v	C						
	ammonium sulfate	2.5	% v/v	C						
	LSD P=.05				.	1.72	31.48	1.03	1.72	.
	Standard Deviation				0.00	1.12	20.43	0.67	1.12	0.00
	CV				0.0	49.69	27.24	0.84	447.21	0.0
	Grand Mean				0.00	2.25	75.00	79.75	0.25	80.00
	Levene's F^				.	0.45	0.454	11.25*	0.45	.
	Levene's Prob(F)				.	0.771	0.768	0.00*	0.771	.
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				.	0.6943*	0.7556*	0.8981*	0.6943*	.
	P(Shapiro-Wilk)^				.	0.0*	0.0002*	0.038*	0.0*	.
	Skewness^				.	1.8758*	-1.8499*	-0.3474	1.8758*	.
	P(Skewness)^				.	0.0029*	0.0033*	0.535	0.0029*	.
	Kurtosis^				.	6.3489*	6.138*	1.8844	6.3489*	.
	P(Kurtosis)^				.	0.0*	0.0*	0.093	0.0*	.
	Replicate F				0.000	1.000	0.910	1.000	1.000	0.000
	Replicate Prob(F)				1.0000	0.4262	0.4650	0.4262	0.4262	1.0000
	Treatment F				0.000	61.000	17.695	17669.446	1.000	0.000
	Treatment Prob(F)				1.0000	0.0001	0.0001	0.0001	0.4449	1.0000

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Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 41,42=3.3; 43,44=3.8
Untreated treatment(s) 10 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,7,15,16,24,25,26,28,30,37,46 because error mean square = 0.
^Calculated from residual.

University of Maryland

Efficacy of ATC and Resicore XL tankmitures in Field Corn

Trial ID: Corn4-22 Cooperator Trial ID:
Protocol ID: Corn4-22 Location: Trial Year: 2022
Project ID: NA22T9E008H Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	8*	9*	10*	12*	13*	15*
	Pest Type				W, Weed	W, Weed	W, Weed			
	Pest Code				IPOSS	DIGSA	SETFA			
	Pest Name				Morning glory	large crabgrass	Giant foxtail			
	Crop Type, Code							C, ZEAMD	C, ZEAMD	C, ZEAMD
	Crop Name							Dent corn	Dent corn	Dent corn
	Rating Date				Jun-13-2022	Jun-13-2022	Jun-13-2022	Jun-16-2022	Jun-16-2022	Jun-20-2022
	Rating Type				CONTRO	CONTRO	CONTRO	PHYGEN	PHYNEC	PHYGEN
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-14-2022	Jun-14-2022	Jun-14-2022	Jun-17-2022	Jun-17-2022	Jun-20-2022
	Days After First/Last Applic.				24, 13	24, 13	24, 13	27, 3	27, 3	31, 7
	Trt-Eval Interval									
	Days After Emergence				18 DE-1	18 DE-1	18 DE-1	21 DE-1	21 DE-1	25 DE-1
1	untreated				0.0 b	0.0 -	0.0 b	0.0 b	0.0 b	0.0 -
2	Resicore XL	2.45	lb ae/a	A	99.0 a	100.0 -	100.0 a	0.0 b	0.0 b	0.0 -
	Atrazine 4L	1	lb ai/a	A						
3	Resicore XL	1.63	lb ae/a	B	100.0 a	325.0 -	100.0 a	0.0 b	0.0 b	0.0 -
	Atrazine 4L	1	lb ai/a	B						
	Durango DMA	1	lb ae/a	B						
	nonionic surfactant	0.25	% v/v	B						
	ammonium sulfate	2.5	% v/v	B						
4	Atrazine 4L	1	lb ae/a	A	97.5 a	95.3 -	96.5 a	5.3 a	5.3 a	0.0 -
	Princep 4L	1	lb ai/a	A						
	Resicore XL	1.22	lb ae/a	C						
	Atrazine 4L	1	lb ai/a	C						
	Durango DMA	1	lb ae/a	C						
	nonionic surfactant	0.25	% v/v	C						
	ammonium sulfate	2.5	% v/v	C						
7	Acuron	0.086	lb ai/gal	A	95.8 a	98.8 -	98.8 a	0.0 b	0.0 b	0.0 -
	Halex GT	1.98	lb ai/a	C						
	nonionic surfactant	0.25	% v/v	C						
	ammonium sulfate	2.5	% v/v	C						
10	Atrazine 4L	1	lb ae/a	A	98.8	93.3	94.8	0.0	0.0	0.0
	Princep 4L	1	lb ai/a	A						
	Acuron GT	2.02	lb ai/a	C						
	nonionic surfactant	0.25	% v/v	C						
	ammonium sulfate	2.5	% v/v	C						
	LSD P=.05				4.77	309.60	2.64	2.28	2.28	.
	Standard Deviation				3.09	200.95	1.71	1.48	1.48	0.00
	CV				3.94	162.32	2.17	140.72	140.72	0.0
	Grand Mean				78.45	123.80	79.05	1.05	1.05	0.00
	Levene's F^				0.521	0.45	1.001	1.458	1.458	.
	Levene's Prob(F)				0.722	0.771	0.438	0.264	0.264	.
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				0.9398	0.6986*	0.946	0.7933*	0.7933*	.
	P(Shapiro-Wilk)^				0.2377	0.0*	0.31	0.0007*	0.0007*	.
	Skewness^				-0.6271	1.8756*	-0.574	1.4626*	1.4626*	.
	P(Skewness)^				0.2681	0.0029*	0.3095	0.0154*	0.0154*	.
	Kurtosis^				0.146	6.348*	0.6262	5.3163*	5.3163*	.
	P(Kurtosis)^				0.8924	0.0*	0.5636	0.0*	0.0*	.
	Replicate F				1.706	1.015	1.426	1.000	1.000	0.000
	Replicate Prob(F)				0.2188	0.4201	0.2836	0.4262	0.4262	1.0000
	Treatment F				805.223	1.432	2665.671	10.099	10.099	0.000
	Treatment Prob(F)				0.0001	0.2827	0.0001	0.0008	0.0008	1.0000

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* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,7,15,16,24,25,26,28,30,37,46 because error mean square = 0.
^Calculated from residual.

University of Maryland

Efficacy of ATC and Resicore XL tankmitures in Field Corn

Trial ID: Corn4-22 Cooperator Trial ID:
Protocol ID: Corn4-22 Location: Trial Year: 2022
Project ID: NA22T9E008H Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	16*	17*	18*	19*	21*	23*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed		
	Pest Code				CHEAL	IPOSS	SETFA	CYPES		
	Pest Name				common lambsqua>	Morning glory	Giant foxtail	Yellow nutsedge		
	Crop Type, Code								C, ZEAMD	C, ZEAMD
	Crop Name								Dent corn	Dent corn
	Rating Date				Jun-20-2022	Jun-20-2022	Jun-20-2022	Jun-20-2022	Jun-24-2022	Jun-27-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN	PHYGEN
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100		%, 0, 100	%, 0, 100
	Data Entry Date				Jun-20-2022	Jun-20-2022	Jun-20-2022	Jun-20-2022	Jul-1-2022	Jul-1-2022
	Days After First/Last Applic.				31, 7	31, 7	31, 7	31, 7	35, 3	38, 6
	Trt-Eval Interval									
	Days After Emergence				25 DE-1	25 DE-1	25 DE-1	25 DE-1	29 DE-1	32 DE-1
1	untreated				0.0 -	0.0 b	0.0 b	0.0 b	0.0 -	0.0 -
2	Resicore XL	2.45	lb ae/a	A	100.0 -	98.8 a	100.0 a	99.5 a	0.0 -	0.0 -
	Atrazine 4L	1	lb ai/a	A						
3	Resicore XL	1.63	lb ae/a	B	100.0 -	99.3 a	100.0 a	100.0 a	0.0 -	0.0 -
	Atrazine 4L	1	lb ai/a	B						
	Durango DMA	1	lb ae/a	B						
	nonionic surfactant	0.25	% v/v	B						
	ammonium sulfate	2.5	% v/v	B						
4	Atrazine 4L	1	lb ae/a	A	100.0 -	100.0 a	100.0 a	94.5 a	2.0 -	0.0 -
	Princep 4L	1	lb ai/a	A						
	Resicore XL	1.22	lb ae/a	C						
	Atrazine 4L	1	lb ai/a	C						
	Durango DMA	1	lb ae/a	C						
	nonionic surfactant	0.25	% v/v	C						
	ammonium sulfate	2.5	% v/v	C						
7	Acuron	0.086	lb ai/gal	A	100.0 -	92.5 a	99.5 a	98.0 a	0.0 -	1.3 -
	Halex GT	1.98	lb ai/a	C						
	nonionic surfactant	0.25	% v/v	C						
	ammonium sulfate	2.5	% v/v	C						
10	Atrazine 4L	1	lb ae/a	A	100.0	99.3	100.0	87.5	0.0	0.0
	Princep 4L	1	lb ai/a	A						
	Acuron GT	2.02	lb ai/a	C						
	nonionic surfactant	0.25	% v/v	C						
	ammonium sulfate	2.5	% v/v	C						
	LSD P=.05				.	10.77	0.69	4.10	1.69	1.72
	Standard Deviation				0.00	6.99	0.45	2.66	1.10	1.12
	CV				0.0	8.95	0.56	3.39	273.86	447.21
	Grand Mean				80.00	78.10	79.90	78.40	0.40	0.25
	Levene's F^				.	0.477	0.45	1.178	7.20*	0.45
	Levene's Prob(F)				.	0.752	0.771	0.36	0.002*	0.771
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				.	0.8034*	0.6943*	0.9407	0.8847*	0.6943*
	P(Shapiro-Wilk)^				.	0.001*	0.0*	0.2477	0.0215*	0.0*
	Skewness^				.	-1.8065*	-1.8758*	-0.9303	0.5105	1.8758*
	P(Skewness)^				.	0.0039*	0.0029*	0.1069	0.3647	0.0029*
	Kurtosis^				.	5.6971*	6.3489*	2.1248	2.425*	6.3489*
	P(Kurtosis)^				.	0.0*	0.0*	0.0606	0.0346*	0.0*
	Replicate F				0.000	0.782	1.000	1.377	1.000	1.000
	Replicate Prob(F)				1.0000	0.5263	0.4262	0.2969	0.4262	0.4262
	Treatment F				0.000	156.894	39901.004	1089.863	2.667	1.000
	Treatment Prob(F)				1.0000	0.0001	0.0001	0.0001	0.0842	0.4449

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Untreated treatment(s) 10 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,7,15,16,24,25,26,28,30,37,46 because error mean square = 0.
^Calculated from residual.

University of Maryland

Efficacy of ATC and Resicore XL tankmitures in Field Corn

Trial ID: Corn4-22 Cooperator Trial ID:
Protocol ID: Corn4-22 Location: Trial Year: 2022
Project ID: NA22T9E008H Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	24*	25*	26*	27*	28*	30*	31*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed		W, Weed
	Pest Code				ABUTH	AMACH	CHEAL	IPOSS	SETFA		ABUTH
	Pest Name				velvetleaf	smooth pigweed	common lambsqua>	Morning glory	Giant foxtail		velvetleaf
	Crop Type, Code									C, ZEAMD	
	Crop Name									Dent corn	
	Rating Date				Jun-27-2022	Jun-27-2022	Jun-27-2022	Jun-27-2022	Jun-27-2022	Jul-5-2022	Jul-5-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-1-2022	Jul-1-2022	Jul-1-2022	Jul-1-2022	Jul-1-2022	Jul-5-2022	Jul-5-2022
	Days After First/Last Applic.				38, 6	38, 6	38, 6	38, 6	38, 6	46, 14	46, 14
	Trt-Eval Interval										
	Days After Emergence				32 DE-1	32 DE-1	32 DE-1	32 DE-1	32 DE-1	40 DE-1	40 DE-1
1	untreated				0.0 -	0.0 -	0.0 -	0.0 b	0.0 -	0.0 -	0.0 b
2	Resicore XL	2.45	lb ae/a	A	100.0 -	100.0 -	100.0 -	89.3 a	100.0 -	0.0 -	100.0 a
	Atrazine 4L	1	lb ai/a	A							
3	Resicore XL	1.63	lb ae/a	B	100.0 -	100.0 -	100.0 -	91.3 a	100.0 -	0.0 -	100.0 a
	Atrazine 4L	1	lb ai/a	B							
	Durango DMA	1	lb ae/a	B							
	nonionic surfactant	0.25	% v/v	B							
	ammonium sulfate	2.5	% v/v	B							
4	Atrazine 4L	1	lb ae/a	A	100.0 -	100.0 -	100.0 -	92.5 a	100.0 -	0.0 -	75.0 a
	Princep 4L	1	lb ai/a	A							
	Resicore XL	1.22	lb ae/a	C							
	Atrazine 4L	1	lb ai/a	C							
	Durango DMA	1	lb ae/a	C							
	nonionic surfactant	0.25	% v/v	C							
	ammonium sulfate	2.5	% v/v	C							
7	Acuron	0.086	lb ai/gal	A	100.0 -	100.0 -	100.0 -	72.0 a	100.0 -	0.0 -	100.0 a
	Halex GT	1.98	lb ai/a	C							
	nonionic surfactant	0.25	% v/v	C							
	ammonium sulfate	2.5	% v/v	C							
10	Atrazine 4L	1	lb ae/a	A	100.0	100.0	100.0	95.8	100.0	0.0	100.0
	Princep 4L	1	lb ai/a	A							
	Acuron GT	2.02	lb ai/a	C							
	nonionic surfactant	0.25	% v/v	C							
	ammonium sulfate	2.5	% v/v	C							
	LSD P=.05				.	.	.	29.10	.	.	34.45
	Standard Deviation				0.00	0.00	0.00	18.89	0.00	0.00	22.36
	CV				0.0	0.0	0.0	27.38	0.0	0.0	29.81
	Grand Mean				80.00	80.00	80.00	69.00	80.00	0.00	75.00
	Levene's F^				.	.	.	0.672	.	.	0.45
	Levene's Prob(F)				.	.	.	0.621	.	.	0.771
	Rank X2				.	.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.	.
	Shapiro-Wilk^				.	.	.	0.8076*	.	.	0.6943*
	P(Shapiro-Wilk)^				.	.	.	0.0011*	.	.	0.0*
	Skewness^				.	.	.	-1.7537*	.	.	-1.8758*
	P(Skewness)^				.	.	.	0.0048*	.	.	0.0029*
	Kurtosis^				.	.	.	5.7994*	.	.	6.3489*
	P(Kurtosis)^				.	.	.	0.0*	.	.	0.0*
	Replicate F				0.000	0.000	0.000	0.987	0.000	0.000	1.000
	Replicate Prob(F)				1.0000	1.0000	1.0000	0.4317	1.0000	1.0000	0.4262
	Treatment F				0.000	0.000	0.000	17.451	0.000	0.000	15.000
	Treatment Prob(F)				1.0000	1.0000	1.0000	0.0001	1.0000	1.0000	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 41,42=3.3; 43,44=3.8
Untreated treatment(s) 10 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,7,15,16,24,25,26,28,30,37,46 because error mean square = 0.
^Calculated from residual.

University of Maryland

Efficacy of ATC and Resicore XL tankmitures in Field Corn

Trial ID: Corn4-22 Cooperator Trial ID:
Protocol ID: Corn4-22 Location: Trial Year: 2022
Project ID: NA22T9E008H Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	32*	33*	34*	36*	37*	38*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				CHEAL	IPOSS	SETFA	ABUTH	CHEAL	IPOSS
	Pest Name				common lambsqua>	Morning glory	Giant foxtail	velvetleaf	common lambsqua>	Morning glory
	Crop Type, Code									
	Crop Name									
	Rating Date				Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-11-2022	Jul-11-2022	Jul-11-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-13-2022	Jul-13-2022	Jul-13-2022
	Days After First/Last Applic.				46, 14	46, 14	46, 14	52, 20	52, 20	52, 20
	Trt-Eval Interval									
	Days After Emergence				40 DE-1	40 DE-1	40 DE-1	46 DE-1	46 DE-1	46 DE-1
1	untreated				0.0 b	0.0 b	0.0 b	0.0 b	0.0 -	0.0 b
2	Resicore XL	2.45	lb ae/a	A	100.0 a	89.5 a	94.8 a	98.3 a	100.0 -	83.0 a
	Atrazine 4L	1	lb ai/a	A						
3	Resicore XL	1.63	lb ae/a	B	100.0 a	93.8 a	97.0 a	100.0 a	100.0 -	87.5 a
	Atrazine 4L	1	lb ai/a	B						
	Durango DMA	1	lb ae/a	B						
	nonionic surfactant	0.25	% v/v	B						
	ammonium sulfate	2.5	% v/v	B						
4	Atrazine 4L	1	lb ae/a	A	75.0 a	93.3 a	97.8 a	100.0 a	100.0 -	85.3 a
	Princep 4L	1	lb ai/a	A						
	Resicore XL	1.22	lb ae/a	C						
	Atrazine 4L	1	lb ai/a	C						
	Durango DMA	1	lb ae/a	C						
	nonionic surfactant	0.25	% v/v	C						
	ammonium sulfate	2.5	% v/v	C						
7	Acuron	0.086	lb ai/gal	A	100.0 a	86.3 a	72.0 a	100.0 a	100.0 -	77.8 a
	Halex GT	1.98	lb ai/a	C						
	nonionic surfactant	0.25	% v/v	C						
	ammonium sulfate	2.5	% v/v	C						
10	Atrazine 4L	1	lb ae/a	A	100.0	95.5	99.0	98.8	100.0	89.8
	Princep 4L	1	lb ai/a	A						
	Acuron GT	2.02	lb ai/a	C						
	nonionic surfactant	0.25	% v/v	C						
	ammonium sulfate	2.5	% v/v	C						
	LSD P=.05				34.45	13.91	29.29	2.41	.	13.90
	Standard Deviation				22.36	9.03	19.01	1.57	0.00	9.02
	CV				29.81	12.45	26.3	1.97	0.0	13.53
	Grand Mean				75.00	72.55	72.30	79.65	80.00	66.70
	Levene's F^				0.45	0.897	1.144	0.45	.	3.225*
	Levene's Prob(F)				0.771	0.49	0.374	0.771	.	0.043*
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				0.6943*	0.9358	0.8399*	0.6943*	.	0.955
	P(Shapiro-Wilk)^				0.0*	0.1992	0.0036*	0.0*	.	0.4498
	Skewness^				-1.8758*	-0.8608	-1.5196*	-1.8758*	.	0.073
	P(Skewness)^				0.0029*	0.1339	0.0123*	0.0029*	.	0.8957
	Kurtosis^				6.3489*	2.4202*	5.1312*	6.3489*	.	-1.2168
	P(Kurtosis)^				0.0*	0.0349*	0.0001*	0.0*	.	0.2676
	Replicate F				1.000	1.386	1.171	1.000	0.000	1.269
	Replicate Prob(F)				0.4262	0.2945	0.3614	0.4262	1.0000	0.3292
	Treatment F				15.000	81.158	19.335	3237.735	0.000	68.968
	Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	1.0000	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 41,42=3.3; 43,44=3.8
Untreated treatment(s) 10 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,7,15,16,24,25,26,28,30,37,46 because error mean square = 0.
^Calculated from residual.

University of Maryland

Efficacy of ATC and Resicore XL tankmitures in Field Corn

Trial ID: Corn4-22 Cooperator Trial ID:
Protocol ID: Corn4-22 Location: Trial Year: 2022
Project ID: NA22T9E008H Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	39*	41*	42*	43*	44*	46*	47*
	Pest Type				W, Weed	W, Weed		W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				SETFA	CHEAL	SMARTWEE	IPOSS	SETFA	ABUTH	IPOSS
	Pest Name				Giant foxtail	common lambsqua>		Morning glory	Giant foxtail	velvetleaf	Morning glory
	Crop Type, Code										
	Crop Name										
	Rating Date				Jul-11-2022	Jul-18-2022	Jul-18-2022	Jul-18-2022	Jul-18-2022	Jul-26-2022	Jul-26-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-13-2022	Jul-25-2022	Jul-25-2022	Jul-25-2022	Jul-25-2022	Jul-26-2022	Jul-26-2022
	Days After First/Last Applic.				52, 20	59, 27	59, 27	59, 27	59, 27	67, 35	67, 35
	Trt-Eval Interval										
	Days After Emergence				46 DE-1	53 DE-1	53 DE-1	53 DE-1	53 DE-1	61 DE-1	61 DE-1
1	untreated				0.0 b	0.0 b	0.0 b	0.0 -	0.0 -	0.0 -	0.0 b
2	Resicore XL	2.45	lb ae/a	A	90.5 a	103.8 a	99.9 a	92.2 -	99.3 -	100.0 -	86.8 a
	Atrazine 4L	1	lb ai/a	A							
3	Resicore XL	1.63	lb ae/a	B	96.5 a	103.8 a	97.2 a	68.5 -	70.0 -	100.0 -	84.5 a
	Atrazine 4L	1	lb ai/a	B							
	Durango DMA	1	lb ae/a	B							
	nonionic surfactant	0.25	% v/v	B							
	ammonium sulfate	2.5	% v/v	B							
4	Atrazine 4L	1	lb ae/a	A	87.8 a	100.0 a	97.5 a	47.5 -	68.5 -	100.0 -	86.0 a
	Princep 4L	1	lb ai/a	A							
	Resicore XL	1.22	lb ae/a	C							
	Atrazine 4L	1	lb ai/a	C							
	Durango DMA	1	lb ae/a	C							
	nonionic surfactant	0.25	% v/v	C							
	ammonium sulfate	2.5	% v/v	C							
7	Acuron	0.086	lb ai/gal	A	91.0 a	66.0 a	64.3 a	45.5 -	50.0 -	100.0 -	78.0 a
	Halex GT	1.98	lb ai/a	C							
	nonionic surfactant	0.25	% v/v	C							
	ammonium sulfate	2.5	% v/v	C							
10	Atrazine 4L	1	lb ae/a	A	90.0	75.0	100.0	64.0	92.0	100.0	92.3
	Princep 4L	1	lb ai/a	A							
	Acuron GT	2.02	lb ai/a	C							
	nonionic surfactant	0.25	% v/v	C							
	ammonium sulfate	2.5	% v/v	C							
	LSD P=.05				9.47	38.20	39.47	60.55	62.61	.	12.28
	Standard Deviation				6.15	23.88	24.68	38.91	40.23	0.00	7.97
	CV				8.41	33.83	36.29	78.73	72.87	0.0	11.89
	Grand Mean				73.15	70.59	68.00	49.42	55.21	80.00	67.05
	Levene's F^				0.58	0.723	0.675	2.563	1.771	.	0.88
	Levene's Prob(F)				0.681	0.593	0.622	0.085	0.191	.	0.499
	Rank X2				.	.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.	.
	Shapiro-Wilk^				0.9527	0.8931	0.9034	0.9774	0.9623	.	0.9472
	P(Shapiro-Wilk)^				0.4101	0.0521	0.0776	0.9081	0.6188	.	0.3262
	Skewness^				-0.8011	-1.1795	-1.1163	0.0791	-0.6615	.	-0.3983
	P(Skewness)^				0.1614	0.0657	0.08	0.8901	0.2564	.	0.4776
	Kurtosis^				0.9426	3.4657*	2.8944*	0.1167	0.02	.	-0.9733
	P(Kurtosis)^				0.3873	0.0085*	0.0234*	0.9161	0.9856	.	0.3724
	Replicate F				2.935	0.897	0.857	0.643	0.389	0.000	2.239
	Replicate Prob(F)				0.0766	0.4795	0.4973	0.6034	0.7630	1.0000	0.1362
	Treatment F				177.936	12.551	10.738	3.020	3.006	0.000	89.155
	Treatment Prob(F)				0.0001	0.0010	0.0018	0.0659	0.0666	1.0000	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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Untreated treatment(s) 10 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,7,15,16,24,25,26,28,30,37,46 because error mean square = 0.
^Calculated from residual.

University of Maryland

Efficacy of ATC and Resicore XL tankmitures in Field Corn

Trial ID: Corn4-22 Cooperator Trial ID:
Protocol ID: Corn4-22 Location: Trial Year: 2022
Project ID: NA22T9E008H Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	48*	50*	51*	52*	53*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				SETFA	ABUTH	CHEAL	IPOSS	SETFA
	Pest Name				Giant foxtail	velvetleaf	common lambsqua>	Morning glory	Giant foxtail
	Crop Type, Code								
	Crop Name								
	Rating Date				Jul-26-2022	Aug-2-2022	Aug-2-2022	Aug-2-2022	Aug-2-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-26-2022	Aug-3-2022	Aug-3-2022	Aug-3-2022	Aug-3-2022
	Days After First/Last Applic.				67, 35	74, 42	74, 42	74, 42	74, 42
	Trt-Eval Interval								
	Days After Emergence				61 DE-1	68 DE-1	68 DE-1	68 DE-1	68 DE-1
1	untreated				0.0 b	25.0 -	0.0 b	0.0 b	0.0 b
2	Resicore XL	2.45	lb ae/a	A	87.3 a	100.0 -	99.5 a	89.5 a	95.5 a
	Atrazine 4L	1	lb ai/a	A					
3	Resicore XL	1.63	lb ae/a	B	92.3 a	100.0 -	98.8 a	87.5 a	94.8 a
	Atrazine 4L	1	lb ai/a	B					
	Durango DMA	1	lb ae/a	B					
	nonionic surfactant	0.25	% v/v	B					
	ammonium sulfate	2.5	% v/v	B					
4	Atrazine 4L	1	lb ae/a	A	86.0 a	100.0 -	100.0 a	89.8 a	93.5 a
	Princep 4L	1	lb ai/a	A					
	Resicore XL	1.22	lb ae/a	C					
	Atrazine 4L	1	lb ai/a	C					
	Durango DMA	1	lb ae/a	C					
	nonionic surfactant	0.25	% v/v	C					
	ammonium sulfate	2.5	% v/v	C					
7	Acuron	0.086	lb ai/gal	A	88.0 a	75.0 -	99.5 a	87.8 a	92.0 a
	Halex GT	1.98	lb ai/a	C					
	nonionic surfactant	0.25	% v/v	C					
	ammonium sulfate	2.5	% v/v	C					
10	Atrazine 4L	1	lb ae/a	A	89.5	100.0	100.0	91.8	94.5
	Princep 4L	1	lb ai/a	A					
	Acuron GT	2.02	lb ai/a	C					
	nonionic surfactant	0.25	% v/v	C					
	ammonium sulfate	2.5	% v/v	C					
	LSD P=.05				10.46	54.47	1.58	7.67	7.86
	Standard Deviation				6.79	35.36	1.02	4.98	5.10
	CV				9.6	44.19	1.29	7.02	6.79
	Grand Mean				70.70	80.00	79.55	70.90	75.15
	Levene's F^				0.315	0.75	0.479	0.517	0.33
	Levene's Prob(F)				0.864	0.573	0.751	0.724	0.854
	Rank X2				.	.	.	.	.
	P(Rank X2)				.	.	.	.	.
	Shapiro-Wilk^				0.9499	0.8109*	0.8566*	0.9434	0.9249
	P(Shapiro-Wilk)^				0.3661	0.0013*	0.0069*	0.2776	0.123
	Skewness^				-0.6251	0.0	-0.8576	-0.5809	-1.1376
	P(Skewness)^				0.2697	1.0	0.1352	0.3039	0.0524
	Kurtosis^				-0.1709	4.067*	3.2443*	-0.3573	2.009
	P(Kurtosis)^				0.8742	0.0012*	0.0067*	0.741	0.0747
	Replicate F				1.592	0.000	3.857	1.079	1.230
	Replicate Prob(F)				0.2429	1.0000	0.0383	0.3949	0.3415
	Treatment F				135.988	3.400	7534.334	253.787	271.265
	Treatment Prob(F)				0.0001	0.0444	0.0001	0.0001	0.0001

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^Calculated from residual.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer

Status: E established
ARM Trial Created On: Mar-14-2022
Initiation Date: Apr-25-2022
Completion Date: Sep-14-2022

Trial Location
City: Queenstown **Country:** USA United States
State/Prov.: Maryland
Postal Code: 21658

Latitude of LL Corner °: 38.91596 N
Longitude of LL Corner °: -76.1395602 W

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer
Role: SPONSR sponsor
Sponsor: USDA-NIFA

Crop Description

Crop 1: C SECCE Secale cereale Rye
Entry Date: Jun-25-2021 **Stage Scale:** BBCH
Variety: Aroostook
Planting Date: Apr-25-2022 **Planting Rate:** 240 LB/A
Planting Method: SEEDHA seeded by hand

Crop 2: C AVESP Avena sativa spring oat
Entry Date: Jan-11-2023 **Stage Scale:** BBCH
Variety: Everleaf 126
Planting Date: Apr-25-2022 **Planting Rate:** 277 LB/A
Planting Method: SEEDHA seeded by hand

Crop 3: C CITLA Citrullus lanatus Watermelon
Entry Date: Jan-11-2023 **Stage Scale:** BBCH
Variety: Fascination
Nursery Date: May-4-2022
Planting Date: Jun-16-2022 **Planting Rate:** 5 P/PLOT
Rows per Plot: 4 **Planting Method:** TRANSP transplanted
Row Spacing: 7.5 IN
Spacing within Row: 3 FT

Site and Design
Treated Plot Width: 30 FT
Treated Plot Length: 15 FT
Treated Plot Area: 450.0 FT2
Replications: 4 **Treatments:** 24 **Plots:** 96 **Study Design:** SPLPLO Split-Plot

Soil Description
Description Name: D-3, D-4
% Sand: 42.2 **Texture:** SIL silt loam
% Silt: 42.2 **Soil Name:** Nassawango silt loam
% Clay: 15.6

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Application Description

	A	B
Application Date	Jul-12-2022	Jul-13-2022
Appl. Start Time		8:25 AM
Appl. Stop Time		9:55 AM
Application Method	SPRAY	SPRAY
Application Timing	POSPOS	POSPOS
Application Placement	BRODIR	BRODIR
Applied By	Cochran C	Vollmer, K.
Appl. Entry Date	Feb-20-2023	Feb-20-2023
Air Temperature Start, Stop	76, 81 F	76, 81 F
% Relative Humidity Start, Stop	91, 81	91, 81
Wind Velocity+Dir. Start	4 MPH, ESE	4 MPH, ESE
Wind Velocity+Dir. Stop	5 MPH, SE	5 MPH, SE
Wind Velocity+Dir. Max	5 MPH, SE	5 MPH, SE
Wet Leaves (Y/N)	N, no	N, no
Soil Moisture	VERWET	VERWET
% Cloud Cover	10	10

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale	SECCE, BCER	SECCE, BCER
Crop 2 Code, BBCH Scale	AVESP, BCER	AVESP, BCER
Crop 3 Code, BBCH Scale	CITLA, BVVT	CITLA, BVVT

Application Equipment

	A	B
Equipment Type	SPTRMO	SPRBAC
Operation Pressure	35 PSI	20 PSI
Nozzle Type	DG95015EV	8004VS
Nozzle Tip Size, Color	-, Yellow	-, Yellow
Nozzle Spacing	10 IN	15 IN
Nozzles/Row	3.0	1.0
Band Width	3.0 FT	3.0 FT
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Application Amount	37.1 GAL/AC	20 GAL/AC
Mix Size	30.0 GAL	3.0 GAL
Propellant	COMCO2	COMCO2

Equipment Comment: Gramoxone and clethodim treatments applied on 7-12-22.

Notes

Context	Date	By	Notes
STATUS	Nov-11-2020	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Jun-25-2021	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Nursery Date entered.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code	AMACH	ERICA	VERPE	OTHER
Pest Name	smooth pigweed	mare's-tail	Bird's-eye spee>	
Crop Type, Code				
Crop Name				
Rating Date	Jul-6-2022	Jul-6-2022	Jul-6-2022	Jul-6-2022
Rating Type	COUNT	COUNT	COUNT	COUNT
Rating Unit/Min/Max	/0.25m2, -, -	/0.25m2, -, -	/0.25m2, -, -	/0.25m2, -, -
Data Entry Date	Jul-6-2022	Jul-6-2022	Jul-6-2022	Jul-6-2022
Days After First/Last Applic.	-6, -6	-6, -6	-6, -6	-6, -6
Trt-Eval Interval	-6 DA-A	-6 DA-A	-6 DA-A	-6 DA-A
Level Description	1	2	3	4
TABLE OF R MEANS				
Replicate 1	2.9	1.3	4.7	3.7
Replicate 2	3.9	0.8	4.4	3.5
Replicate 3	5.3	0.9	5.5	4.0
Replicate 4	4.9	2.3	4.8	3.0
TABLE OF A (Termination Herbicide) MEANS				
1 Gramoxone SL 2.0	5.4 -	0.8 -	5.1 -	2.8 -
2 Select Max	3.6 -	1.5 -	6.2 -	4.7 -
3 water/roller	3.8 -	1.7 -	3.2 -	3.3 -
LSD P=.05	2.86	1.56	7.57	2.47
Standard Deviation	4.68	2.54	12.38	4.04
CV	109.82	193.78	256.67	113.86
TABLE OF B (Cover Crop) MEANS				
1 cereal rye	0.5 b	0.8 b	2.8 b	3.3 b
2 spring oats	2.4 b	0.4 b	1.0 b	2.6 b
3 cereal rye;spring oats	0.2 b	0.7 b	0.8 b	1.9 b
4 No Cover	14.0 a	3.4 a	14.6 a	6.4 a
LSD P=.05	2.83	1.78	5.19	2.66
Standard Deviation	4.78	3.00	8.77	4.49
CV	112.13	228.84	181.75	126.37
TABLE OF C (Residual Herbicide) MEANS				
1 Reflex;Dual Magnum	3.8 -	1.3 -	4.6 -	3.8 -
2 No herbicide	4.7 -	1.3 -	5.1 -	3.3 -
LSD P=.05	1.40	0.50	2.22	1.45
Standard Deviation	3.39	1.21	5.36	3.50
CV	79.63	92.01	111.03	98.60
TABLE OF A (Termination Herbicide) B (Cover Crop) MEANS				
1 Gramoxone SL 2.0 1 cereal rye	0.6 -	1.0 -	3.1 -	2.9 -
2 Select Max 1 cereal rye	0.3 -	0.5 -	3.0 -	4.9 -
3 water/roller 1 cereal rye	0.8 -	0.8 -	2.4 -	2.3 -
1 Gramoxone SL 2.0 2 spring oats	4.0 -	0.6 -	1.9 -	1.4 -
2 Select Max 2 spring oats	1.8 -	0.4 -	0.9 -	2.3 -
3 water/roller 2 spring oats	1.4 -	0.3 -	0.4 -	4.1 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats	0.1 -	0.1 -	1.4 -	1.6 -
2 Select Max 3 cereal rye;spring oats	0.0 -	1.0 -	0.6 -	2.5 -
3 water/roller 3 cereal rye;spring oats	0.4 -	1.0 -	0.4 -	1.5 -
1 Gramoxone SL 2.0 4 No Cover	17.0 -	1.3 -	14.0 -	5.1 -
2 Select Max 4 No Cover	12.4 -	4.3 -	20.4 -	9.0 -
3 water/roller 4 No Cover	12.5 -	4.6 -	9.5 -	5.1 -
LSD P=.05	4.90	3.08	8.99	4.61
Standard Deviation	4.78	3.00	8.77	4.49

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code	AMACH	ERICA	VERPE	OTHER
Pest Name	smooth pigweed	mare's-tail	Bird's-eye spee>	
Crop Type, Code				
Crop Name				
Rating Date	Jul-6-2022	Jul-6-2022	Jul-6-2022	Jul-6-2022
Rating Type	COUNT	COUNT	COUNT	COUNT
Rating Unit/Min/Max	/0.25m2, -, -	/0.25m2, -, -	/0.25m2, -, -	/0.25m2, -, -
Data Entry Date	Jul-6-2022	Jul-6-2022	Jul-6-2022	Jul-6-2022
Days After First/Last Applic.	-6, -6	-6, -6	-6, -6	-6, -6
Trt-Eval Interval	-6 DA-A	-6 DA-A	-6 DA-A	-6 DA-A
Level Description	1	2	3	4
CV	112.13	228.84	181.75	126.37
TABLE OF A (Termination Herbicide) C (Residual Herbicide) MEANS				
1 Gramoxone SL 2.0 1 Reflex;Dual Magnum	5.1 -	0.9 -	5.3 -	3.0 -
2 Select Max 1 Reflex;Dual Magnum	2.7 -	1.6 -	5.6 -	3.8 -
3 water/roller 1 Reflex;Dual Magnum	3.6 -	1.5 -	2.8 -	4.5 -
1 Gramoxone SL 2.0 2 No herbicide	5.8 -	0.6 -	4.9 -	2.5 -
2 Select Max 2 No herbicide	4.5 -	1.4 -	6.8 -	5.5 -
3 water/roller 2 No herbicide	3.9 -	1.8 -	3.5 -	2.0 -
LSD P=.05	2.43	0.87	3.84	2.51
Standard Deviation	3.39	1.21	5.36	3.50
CV	79.63	92.01	111.03	98.60
TABLE OF B (Cover Crop) C (Residual Herbicide) MEANS				
1 cereal rye 1 Reflex;Dual Magnum	0.2 -	0.7 -	2.9 -	3.3 -
2 spring oats 1 Reflex;Dual Magnum	1.8 -	0.4 -	0.6 -	2.2 -
3 cereal rye;spring oats 1 Reflex;Dual Magnum	0.3 -	1.0 -	0.7 -	2.4 -
4 No Cover 1 Reflex;Dual Magnum	13.0 -	3.3 -	14.2 -	7.2 -
1 cereal rye 2 No herbicide	0.9 -	0.8 -	2.8 -	3.3 -
2 spring oats 2 No herbicide	2.9 -	0.4 -	1.5 -	3.0 -
3 cereal rye;spring oats 2 No herbicide	0.1 -	0.4 -	0.9 -	1.3 -
4 No Cover 2 No herbicide	14.9 -	3.5 -	15.1 -	5.7 -
LSD P=.05	2.81	1.00	4.43	2.90
Standard Deviation	3.39	1.21	5.36	3.50
CV	79.63	92.01	111.03	98.60
TABLE OF A (Termination Herbicide) B (Cover Crop) C (Residual Herbicide) MEANS				
1 Gramoxone SL 2.0 1 cereal rye 1 Reflex;Dual Magnum	0.5 -	1.0 -	2.8 -	3.5 -
2 Select Max 1 cereal rye 1 Reflex;Dual Magnum	0.0 -	0.5 -	3.8 -	3.5 -
3 water/roller 1 cereal rye 1 Reflex;Dual Magnum	0.0 -	0.5 -	2.3 -	3.0 -
1 Gramoxone SL 2.0 2 spring oats 1 Reflex;Dual Magnum	2.3 -	1.0 -	1.0 -	0.5 -
2 Select Max 2 spring oats 1 Reflex;Dual Magnum	1.0 -	0.3 -	0.5 -	2.0 -

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code	AMACH	ERICA	VERPE	OTHER
Pest Name	smooth pigweed	mare's-tail	Bird's-eye spee>	
Crop Type, Code				
Crop Name				
Rating Date	Jul-6-2022	Jul-6-2022	Jul-6-2022	Jul-6-2022
Rating Type	COUNT	COUNT	COUNT	COUNT
Rating Unit/Min/Max	/0.25m2, -, -	/0.25m2, -, -	/0.25m2, -, -	/0.25m2, -, -
Data Entry Date	Jul-6-2022	Jul-6-2022	Jul-6-2022	Jul-6-2022
Days After First/Last Applic.	-6, -6	-6, -6	-6, -6	-6, -6
Trt-Eval Interval	-6 DA-A	-6 DA-A	-6 DA-A	-6 DA-A
Level Description	1	2	3	4
3 water/roller 2 spring oats 1 Reflex;Dual Magnum	2.3 -	0.0 -	0.3 -	4.0 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 1 Reflex;Dual Magnum	0.3 -	0.0 -	1.5 -	2.0 -
2 Select Max 3 cereal rye;spring oats 1 Reflex;Dual Magnum	0.0 -	1.8 -	0.0 -	2.5 -
3 water/roller 3 cereal rye;spring oats 1 Reflex;Dual Magnum	0.5 -	1.3 -	0.5 -	2.8 -
1 Gramoxone SL 2.0 4 No Cover 1 Reflex;Dual Magnum	17.5 -	1.5 -	16.0 -	6.0 -
2 Select Max 4 No Cover 1 Reflex;Dual Magnum	9.8 -	4.0 -	18.3 -	7.3 -
3 water/roller 4 No Cover 1 Reflex;Dual Magnum	11.8 -	4.3 -	8.3 -	8.3 -
1 Gramoxone SL 2.0 1 cereal rye 2 No herbicide	0.8 -	1.0 -	3.5 -	2.3 -
2 Select Max 1 cereal rye 2 No herbicide	0.5 -	0.5 -	2.3 -	6.3 -
3 water/roller 1 cereal rye 2 No herbicide	1.5 -	1.0 -	2.5 -	1.5 -
1 Gramoxone SL 2.0 2 spring oats 2 No herbicide	5.8 -	0.3 -	2.8 -	2.3 -
2 Select Max 2 spring oats 2 No herbicide	2.5 -	0.5 -	1.3 -	2.5 -
3 water/roller 2 spring oats 2 No herbicide	0.5 -	0.5 -	0.5 -	4.3 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 2 No herbicide	0.0 -	0.3 -	1.3 -	1.3 -
2 Select Max 3 cereal rye;spring oats 2 No herbicide	0.0 -	0.3 -	1.3 -	2.5 -
3 water/roller 3 cereal rye;spring oats 2 No herbicide	0.3 -	0.8 -	0.3 -	0.3 -
1 Gramoxone SL 2.0 4 No Cover 2 No herbicide	16.5 -	1.0 -	12.0 -	4.3 -
2 Select Max 4 No Cover 2 No herbicide	15.0 -	4.5 -	22.5 -	10.8 -
3 water/roller 4 No Cover 2 No herbicide	13.3 -	5.0 -	10.8 -	2.0 -
LSD P=.05	4.87	1.73	7.68	5.02

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University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code	AMACH	ERICA	VERPE	OTHER
Pest Name	smooth pigweed	mare's-tail	Bird's-eye spee>	
Crop Type, Code				
Crop Name				
Rating Date	Jul-6-2022	Jul-6-2022	Jul-6-2022	Jul-6-2022
Rating Type	COUNT	COUNT	COUNT	COUNT
Rating Unit/Min/Max	/0.25m2, -, -	/0.25m2, -, -	/0.25m2, -, -	/0.25m2, -, -
Data Entry Date	Jul-6-2022	Jul-6-2022	Jul-6-2022	Jul-6-2022
Days After First/Last Applic.	-6, -6	-6, -6	-6, -6	-6, -6
Trt-Eval Interval	-6 DA-A	-6 DA-A	-6 DA-A	-6 DA-A
Level Description	1	2	3	4
Standard Deviation	3.39	1.21	5.36	3.50
CV	79.63	92.01	111.03	98.60

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed		W, Weed	
Pest Code	TOTAL		AMACH	TOTAL BL
Pest Name			smooth pigweed	
Crop Type, Code		C, COVER		
Crop Name				
Rating Date	Jul-6-2022	Jul-25-2022	Jul-25-2022	Jul-25-2022
Rating Type	COUNT	BIOMASS	COUNT	
Rating Unit/Min/Max	/0.25m2, -, -	g, -, -	/0.25m2, -, -	/0.25m2, -, -
Data Entry Date	Jul-7-2022	Jul-26-2022	Jul-25-2022	Jul-25-2022
Days After First/Last Applic.	-6, -6	13, 12	13, 12	13, 12
Trt-Eval Interval	-6 DA-A	13 DA-A	13 DA-A	13 DA-A
Level Description	5	6	8	9
TABLE OF R MEANS				
Replicate 1	9.6	119.63	4.0	4.1
Replicate 2	8.7	141.68	6.7	6.3
Replicate 3	10.3	125.57	4.2	6.0
Replicate 4	10.1	147.25	6.7	6.5
TABLE OF A (Termination Herbicide) MEANS				
1 Gramoxone SL 2.0	8.6 -	125.72 -	3.0 -	3.5 -
2 Select Max	12.4 -	140.25 -	6.8 -	7.8 -
3 water/roller	8.1 -	134.63 -	6.4 -	5.9 -
LSD P=.05	6.46	43.382	3.81	4.02
Standard Deviation	10.56	70.917	6.22	6.57
CV	108.99	53.109	115.35	114.86
TABLE OF B (Cover Crop) MEANS				
1 cereal rye	6.9 b	88.02 c	6.9 ab	4.4 b
2 spring oats	4.0 b	175.37 a	3.3 b	3.2 b
3 cereal rye;spring oats	3.4 b	137.21 b	3.5 b	3.9 b
4 No Cover	24.4 a	.	7.9 a	11.4 a
LSD P=.05	5.60	34.788	3.92	4.23
Standard Deviation	9.45	57.360	6.62	7.15
CV	97.59	42.956	122.76	125.02
TABLE OF C (Residual Herbicide) MEANS				
1 Reflex;Dual Magnum	9.7 -	127.01 -	2.1 b	1.7 b
2 No herbicide	9.7 -	140.06 -	8.7 a	9.7 a
LSD P=.05	2.25	19.701	2.90	2.91
Standard Deviation	5.44	47.038	7.00	7.04
CV	56.17	35.226	129.72	123.06
TABLE OF A (Termination Herbicide) B (Cover Crop) MEANS				
1 Gramoxone SL 2.0 1 cereal rye	7.0 -	75.38 -	6.3 -	1.0 -
2 Select Max 1 cereal rye	8.4 -	91.18 -	5.8 -	7.0 -
3 water/roller 1 cereal rye	5.4 -	97.50 -	8.8 -	5.3 -
1 Gramoxone SL 2.0 2 spring oats	3.9 -	172.34 -	0.4 -	0.5 -
2 Select Max 2 spring oats	3.5 -	177.95 -	5.6 -	3.1 -
3 water/roller 2 spring oats	4.8 -	175.81 -	3.9 -	5.9 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats	3.1 -	129.44 -	0.6 -	0.1 -
2 Select Max 3 cereal rye;spring oats	4.1 -	151.64 -	5.0 -	6.3 -
3 water/roller 3 cereal rye;spring oats	2.9 -	130.56 -	4.8 -	5.4 -
1 Gramoxone SL 2.0 4 No Cover	20.4 -	.	4.8 -	12.3 -
2 Select Max 4 No Cover	33.6 -	.	10.9 -	14.6 -
3 water/roller 4 No Cover	19.3 -	.	8.1 -	7.3 -
LSD P=.05	9.70	60.254	6.80	7.33
Standard Deviation	9.45	57.360	6.62	7.15

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
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University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed		W, Weed	
Pest Code	TOTAL		AMACH	TOTAL BL
Pest Name			smooth pigweed	
Crop Type, Code		C, COVER		
Crop Name				
Rating Date	Jul-6-2022	Jul-25-2022	Jul-25-2022	Jul-25-2022
Rating Type	COUNT	BIOMASS	COUNT	
Rating Unit/Min/Max	/0.25m2, -, -	g, -, -	/0.25m2, -, -	/0.25m2, -, -
Data Entry Date	Jul-7-2022	Jul-26-2022	Jul-25-2022	Jul-25-2022
Days After First/Last Applic.	-6, -6	13, 12	13, 12	13, 12
Trt-Eval Interval	-6 DA-A	13 DA-A	13 DA-A	13 DA-A
Level Description	5	6	8	9
CV	97.59	42.956	122.76	125.02
TABLE OF A (Termination Herbicide) C (Residual Herbicide) MEANS				
1 Gramoxone SL 2.0 1 Reflex;Dual Magnum	9.2 -	133.36 -	1.5 -	1.3 -
2 Select Max 1 Reflex;Dual Magnum	11.1 -	127.82 -	2.8 -	2.1 -
3 water/roller 1 Reflex;Dual Magnum	8.8 -	119.85 -	2.0 -	1.8 -
1 Gramoxone SL 2.0 2 No herbicide	8.0 -	118.08 -	4.5 -	5.7 -
2 Select Max 2 No herbicide	13.8 -	152.69 -	10.8 -	13.4 -
3 water/roller 2 No herbicide	7.3 -	149.40 -	10.8 -	10.1 -
LSD P=.05	3.90	34.123	5.02	5.05
Standard Deviation	5.44	47.038	7.00	7.04
CV	56.17	35.226	129.72	123.06
TABLE OF B (Cover Crop) C (Residual Herbicide) MEANS				
1 cereal rye 1 Reflex;Dual Magnum	6.9 -	73.07 -	1.8 -	1.5 -
2 spring oats 1 Reflex;Dual Magnum	3.2 -	176.58 -	0.7 -	0.0 -
3 cereal rye;spring oats 1 Reflex;Dual Magnum	4.1 -	131.38 -	0.3 -	0.5 -
4 No Cover 1 Reflex;Dual Magnum	24.6 -	.	5.7 -	4.8 -
1 cereal rye 2 No herbicide	6.9 -	102.97 -	12.0 -	7.3 -
2 spring oats 2 No herbicide	4.9 -	174.15 -	5.9 -	6.3 -
3 cereal rye;spring oats 2 No herbicide	2.7 -	143.05 -	6.7 -	7.3 -
4 No Cover 2 No herbicide	24.3 -	.	10.2 -	17.9 -
LSD P=.05	4.51	39.402	5.80	5.83
Standard Deviation	5.44	47.038	7.00	7.04
CV	56.17	35.226	129.72	123.06
TABLE OF A (Termination Herbicide) B (Cover Crop) C (Residual Herbicide) MEANS				
1 Gramoxone SL 2.0 1 cereal rye 1 Reflex;Dual Magnum	7.3 -	75.70 -	5.3 -	1.5 -
2 Select Max 1 cereal rye 1 Reflex;Dual Magnum	7.8 -	73.60 -	0.3 -	1.3 -
3 water/roller 1 cereal rye 1 Reflex;Dual Magnum	5.8 -	69.90 -	0.0 -	1.8 -
1 Gramoxone SL 2.0 2 spring oats 1 Reflex;Dual Magnum	2.5 -	180.48 -	0.0 -	0.0 -
2 Select Max 2 spring oats 1 Reflex;Dual Magnum	2.8 -	180.98 -	1.3 -	0.0 -

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed		W, Weed	
Pest Code	TOTAL		AMACH	TOTAL BL
Pest Name			smooth pigweed	
Crop Type, Code		C, COVER		
Crop Name				
Rating Date	Jul-6-2022	Jul-25-2022	Jul-25-2022	Jul-25-2022
Rating Type	COUNT	BIOMASS	COUNT	
Rating Unit/Min/Max	/0.25m2, -, -	g, -, -	/0.25m2, -, -	/0.25m2, -, -
Data Entry Date	Jul-7-2022	Jul-26-2022	Jul-25-2022	Jul-25-2022
Days After First/Last Applic.	-6, -6	13, 12	13, 12	13, 12
Trt-Eval Interval	-6 DA-A	13 DA-A	13 DA-A	13 DA-A
Level Description	5	6	8	9
3 water/roller 2 spring oats 1 Reflex;Dual Magnum	4.3 -	168.30 -	0.8 -	0.0 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 1 Reflex;Dual Magnum	3.5 -	143.90 -	0.5 -	0.0 -
2 Select Max 3 cereal rye;spring oats 1 Reflex;Dual Magnum	4.3 -	128.88 -	0.0 -	0.8 -
3 water/roller 3 cereal rye;spring oats 1 Reflex;Dual Magnum	4.5 -	121.35 -	0.3 -	0.8 -
1 Gramoxone SL 2.0 4 No Cover 1 Reflex;Dual Magnum	23.5 -	.	0.3 -	3.5 -
2 Select Max 4 No Cover 1 Reflex;Dual Magnum	29.5 -	.	9.8 -	6.3 -
3 water/roller 4 No Cover 1 Reflex;Dual Magnum	20.8 -	.	7.0 -	4.8 -
1 Gramoxone SL 2.0 1 cereal rye 2 No herbicide	6.8 -	75.05 -	7.3 -	0.5 -
2 Select Max 1 cereal rye 2 No herbicide	9.0 -	108.75 -	11.3 -	12.8 -
3 water/roller 1 cereal rye 2 No herbicide	5.0 -	125.10 -	17.5 -	8.8 -
1 Gramoxone SL 2.0 2 spring oats 2 No herbicide	5.3 -	164.20 -	0.8 -	1.0 -
2 Select Max 2 spring oats 2 No herbicide	4.3 -	174.93 -	10.0 -	6.3 -
3 water/roller 2 spring oats 2 No herbicide	5.3 -	183.33 -	7.0 -	11.8 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 2 No herbicide	2.8 -	114.98 -	0.8 -	0.3 -
2 Select Max 3 cereal rye;spring oats 2 No herbicide	4.0 -	174.40 -	10.0 -	11.8 -
3 water/roller 3 cereal rye;spring oats 2 No herbicide	1.3 -	139.78 -	9.3 -	10.0 -
1 Gramoxone SL 2.0 4 No Cover 2 No herbicide	17.3 -	.	9.3 -	21.0 -
2 Select Max 4 No Cover 2 No herbicide	37.8 -	.	12.0 -	23.0 -
3 water/roller 4 No Cover 2 No herbicide	17.8 -	.	9.3 -	9.8 -
LSD P=.05	7.80	68.245	10.04	10.09

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
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University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed		W, Weed	
Pest Code	TOTAL		AMACH	TOTAL BL
Pest Name			smooth pigweed	
Crop Type, Code		C, COVER		
Crop Name				
Rating Date	Jul-6-2022	Jul-25-2022	Jul-25-2022	Jul-25-2022
Rating Type	COUNT	BIOMASS	COUNT	
Rating Unit/Min/Max	/0.25m2, -, -	g, -, -	/0.25m2, -, -	/0.25m2, -, -
Data Entry Date	Jul-7-2022	Jul-26-2022	Jul-25-2022	Jul-25-2022
Days After First/Last Applic.	-6, -6	13, 12	13, 12	13, 12
Trt-Eval Interval	-6 DA-A	13 DA-A	13 DA-A	13 DA-A
Level Description	5	6	8	9
Standard Deviation	5.44	47.038	7.00	7.04
CV	56.17	35.226	129.72	123.06

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type Pest Code Pest Name Crop Type, Code Crop Name Rating Date Rating Type Rating Unit/Min/Max Data Entry Date Days After First/Last Applic. Trt-Eval Interval	BL EDG	BL CTR	W, Weed G EDG	W, Weed G CTR
	Jul-29-2022	Jul-29-2022	Jul-29-2022	Jul-29-2022
	CONTRO	CONTRO	CONTRO	CONTRO
	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Aug-3-2022	Aug-3-2022	Aug-3-2022	Aug-3-2022
	17, 16	17, 16	17, 16	17, 16
	17 DA-A	17 DA-A	17 DA-A	17 DA-A
Level Description	11	12	13	14
TABLE OF R MEANS Replicate 1	70.3	79.2	80.2	91.7
Replicate 2	59.0	74.7	75.4	89.7
Replicate 3	78.1	83.0	81.3	90.3
Replicate 4	64.5	80.2	68.9	86.8
TABLE OF A (Termination Herbicide) MEANS 1 Gramoxone SL 2.0	90.8 a	98.2 a	87.6 a	100.0 a
2 Select Max	66.3 b	75.5 b	90.1 a	99.8 a
3 water/roller	46.8 c	64.1 b	51.6 b	69.1 b
LSD P=.05	14.34	13.99	14.77	5.58
Standard Deviation	23.44	22.88	24.14	9.13
CV	34.48	28.86	31.57	10.19
TABLE OF B (Cover Crop) MEANS 1 cereal rye	76.3 a	89.3 a	80.9 a	98.0 a
2 spring oats	81.4 a	89.7 a	86.1 a	99.3 a
3 cereal rye;spring oats	80.4 a	94.0 a	83.9 a	94.8 a
4 No Cover	33.9 b	44.2 b	55.0 b	66.4 b
LSD P=.05	15.92	15.40	11.52	7.09
Standard Deviation	26.87	26.00	19.45	11.97
CV	39.52	32.80	25.44	13.36
TABLE OF C (Residual Herbicide) MEANS 1 Reflex;Dual Magnum	70.5 -	81.4 -	76.4 -	88.7 -
2 No herbicide	65.4 -	77.1 -	76.5 -	90.5 -
LSD P=.05	6.83	12.06	5.55	4.09
Standard Deviation	16.49	29.14	13.40	9.87
CV	24.26	36.76	17.53	11.01
TABLE OF A (Termination Herbicide) B (Cover Crop) MEANS 1 Gramoxone SL 2.0 1 cereal rye	90.4 ab	97.9 ab	91.6 a	100.0 a
2 Select Max 1 cereal rye	83.6 ab	94.9 ab	90.3 a	100.0 a
3 water/roller 1 cereal rye	54.9 c	75.0 ab	60.8 c	94.0 ab
1 Gramoxone SL 2.0 2 spring oats	94.6 a	100.0 a	88.1 a	100.0 a
2 Select Max 2 spring oats	84.5 ab	97.0 ab	90.9 a	100.0 a
3 water/roller 2 spring oats	65.0 bc	72.1 b	79.3 abc	98.0 a
1 Gramoxone SL 2.0 3 cereal rye;spring oats	91.8 a	100.0 a	91.0 a	100.0 a
2 Select Max 3 cereal rye;spring oats	84.5 ab	85.0 ab	94.1 a	100.0 a
3 water/roller 3 cereal rye;spring oats	65.0 bc	96.9 ab	66.5 bc	84.4 b
1 Gramoxone SL 2.0 4 No Cover	86.6 ab	95.0 ab	79.8 abc	100.0 a
2 Select Max 4 No Cover	12.5 d	25.0 c	85.1 ab	99.1 a
3 water/roller 4 No Cover	2.5 d	12.5 c	0.0 d	0.0 c
LSD P=.05	27.57	26.68	19.96	12.28
Standard Deviation	26.87	26.00	19.45	11.97

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University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type Pest Code Pest Name Crop Type, Code Crop Name Rating Date Rating Type Rating Unit/Min/Max Data Entry Date Days After First/Last Applic. Trt-Eval Interval	BL EDG Jul-29-2022 CONTRO %, 0, 100 Aug-3-2022 17, 16 17 DA-A	BL CTR Jul-29-2022 CONTRO %, 0, 100 Aug-3-2022 17, 16 17 DA-A	W, Weed G EDG Jul-29-2022 CONTRO %, 0, 100 Aug-3-2022 17, 16 17 DA-A	W, Weed G CTR Jul-29-2022 CONTRO %, 0, 100 Aug-3-2022 17, 16 17 DA-A
Level Description	11	12	13	14
CV	39.52	32.80	25.44	13.36
TABLE OF A (Termination Herbicide) C (Residual Herbicide) MEANS				
1 Gramoxone SL 2.0 1 Reflex;Dual Magnum	93.0 -	98.9 -	88.8 -	100.0 -
2 Select Max 1 Reflex;Dual Magnum	69.9 -	78.1 -	89.4 -	99.6 -
3 water/roller 1 Reflex;Dual Magnum	48.7 -	67.3 -	51.0 -	66.6 -
1 Gramoxone SL 2.0 2 No herbicide	88.7 -	97.5 -	86.5 -	100.0 -
2 Select Max 2 No herbicide	62.6 -	72.9 -	90.8 -	100.0 -
3 water/roller 2 No herbicide	45.0 -	60.9 -	52.3 -	71.6 -
LSD P=.05	11.83	20.89	9.61	7.08
Standard Deviation	16.49	29.14	13.40	9.87
CV	24.26	36.76	17.53	11.01
TABLE OF B (Cover Crop) C (Residual Herbicide) MEANS				
1 cereal rye 1 Reflex;Dual Magnum	73.5 -	88.5 -	78.9 -	97.7 -
2 spring oats 1 Reflex;Dual Magnum	82.3 -	97.3 -	87.3 -	99.5 -
3 cereal rye;spring oats 1 Reflex;Dual Magnum	84.9 -	98.3 -	84.5 -	91.7 -
4 No Cover 1 Reflex;Dual Magnum	41.5 -	41.7 -	54.8 -	66.1 -
1 cereal rye 2 No herbicide	79.1 -	90.0 -	82.8 -	98.3 -
2 spring oats 2 No herbicide	80.5 -	82.2 -	84.8 -	99.2 -
3 cereal rye;spring oats 2 No herbicide	75.9 -	89.6 -	83.3 -	97.9 -
4 No Cover 2 No herbicide	26.3 -	46.7 -	55.1 -	66.7 -
LSD P=.05	13.65	24.13	11.09	8.17
Standard Deviation	16.49	29.14	13.40	9.87
CV	24.26	36.76	17.53	11.01
TABLE OF A (Termination Herbicide) B (Cover Crop) C (Residual Herbicide) MEANS				
1 Gramoxone SL 2.0 1 cereal rye 1 Reflex;Dual Magnum	88.8 -	95.8 -	92.0 -	100.0 -
2 Select Max 1 cereal rye 1 Reflex;Dual Magnum	86.0 -	94.8 -	88.5 -	100.0 -
3 water/roller 1 cereal rye 1 Reflex;Dual Magnum	45.8 -	75.0 -	56.3 -	93.0 -
1 Gramoxone SL 2.0 2 spring oats 1 Reflex;Dual Magnum	98.0 -	100.0 -	90.3 -	100.0 -
2 Select Max 2 spring oats 1 Reflex;Dual Magnum	84.3 -	97.5 -	90.5 -	100.0 -

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type Pest Code Pest Name Crop Type, Code Crop Name Rating Date Rating Type Rating Unit/Min/Max Data Entry Date Days After First/Last Applic. Trt-Eval Interval	BL EDG	BL CTR	W, Weed G EDG	W, Weed G CTR
	Jul-29-2022 CONTRO %, 0, 100 Aug-3-2022 17, 16 17 DA-A	Jul-29-2022 CONTRO %, 0, 100 Aug-3-2022 17, 16 17 DA-A	Jul-29-2022 CONTRO %, 0, 100 Aug-3-2022 17, 16 17 DA-A	Jul-29-2022 CONTRO %, 0, 100 Aug-3-2022 17, 16 17 DA-A
Level Description	11	12	13	14
3 water/roller 2 spring oats 1 Reflex;Dual Magnum	64.5 -	94.3 -	81.3 -	98.5 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 1 Reflex;Dual Magnum	90.8 -	100.0 -	91.5 -	100.0 -
2 Select Max 3 cereal rye;spring oats 1 Reflex;Dual Magnum	84.5 -	95.0 -	95.5 -	100.0 -
3 water/roller 3 cereal rye;spring oats 1 Reflex;Dual Magnum	79.5 -	100.0 -	66.5 -	75.0 -
1 Gramoxone SL 2.0 4 No Cover 1 Reflex;Dual Magnum	94.5 -	100.0 -	81.3 -	100.0 -
2 Select Max 4 No Cover 1 Reflex;Dual Magnum	25.0 -	25.0 -	83.3 -	98.3 -
3 water/roller 4 No Cover 1 Reflex;Dual Magnum	5.0 -	0.0 -	0.0 -	0.0 -
1 Gramoxone SL 2.0 1 cereal rye 2 No herbicide	92.0 -	100.0 -	91.3 -	100.0 -
2 Select Max 1 cereal rye 2 No herbicide	81.3 -	95.0 -	92.0 -	100.0 -
3 water/roller 1 cereal rye 2 No herbicide	64.0 -	75.0 -	65.3 -	95.0 -
1 Gramoxone SL 2.0 2 spring oats 2 No herbicide	91.3 -	100.0 -	86.0 -	100.0 -
2 Select Max 2 spring oats 2 No herbicide	84.8 -	96.5 -	91.3 -	100.0 -
3 water/roller 2 spring oats 2 No herbicide	65.5 -	50.0 -	77.3 -	97.5 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 2 No herbicide	92.8 -	100.0 -	90.5 -	100.0 -
2 Select Max 3 cereal rye;spring oats 2 No herbicide	84.5 -	75.0 -	92.8 -	100.0 -
3 water/roller 3 cereal rye;spring oats 2 No herbicide	50.5 -	93.8 -	66.5 -	93.8 -
1 Gramoxone SL 2.0 4 No Cover 2 No herbicide	78.8 -	90.0 -	78.3 -	100.0 -
2 Select Max 4 No Cover 2 No herbicide	0.0 -	25.0 -	87.0 -	100.0 -
3 water/roller 4 No Cover 2 No herbicide	0.0 -	25.0 -	0.0 -	0.0 -
LSD P=.05	23.65	41.79	19.22	14.16

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University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type			W, Weed	W, Weed
Pest Code	BL EDG	BL CTR	G EDG	G CTR
Pest Name				
Crop Type, Code				
Crop Name				
Rating Date	Jul-29-2022	Jul-29-2022	Jul-29-2022	Jul-29-2022
Rating Type	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Data Entry Date	Aug-3-2022	Aug-3-2022	Aug-3-2022	Aug-3-2022
Days After First/Last Applic.	17, 16	17, 16	17, 16	17, 16
Trt-Eval Interval	17 DA-A	17 DA-A	17 DA-A	17 DA-A
Level Description	11	12	13	14
Standard Deviation	16.49	29.14	13.40	9.87
CV	24.26	36.76	17.53	11.01

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed	W, Weed		
Pest Code	AMACH	GENERAL		
Pest Name	smooth pigweed			
Crop Type, Code			C, CITLA	C, CITLA
Crop Name			Watermelon	Watermelon
Rating Date	Aug-2-2022	Aug-2-2022	Sep-7-2022	Sep-7-2022
Rating Type	BIOMASS	BIOMASS	TOTAL COUNT	Total Weigh
Rating Unit/Min/Max	/0.25m2, -, -	/0.25m2, -, -	no./2 r, -, -	LB, -, -
Data Entry Date	Aug-9-2022	Aug-9-2022	Sep-14-2022	Sep-14-2022
Days After First/Last Applic.	21, 20	21, 20	57, 56	57, 56
Trt-Eval Interval	21 DA-A	21 DA-A	57 DA-A	57 DA-A
Level Description	16	17	19	20
TABLE OF R MEANS				
Replicate 1	8.0129	5.1875	26.1	313.148
Replicate 2	19.1877	13.5042	24.2	267.829
Replicate 3	4.5963	5.4585	24.5	291.578
Replicate 4	5.9794	12.8000	22.4	243.242
TABLE OF A (Termination Herbicide) MEANS				
1 Gramoxone SL 2.0	4.1098 -	2.9469 -	24.9 -	298.673 -
2 Select Max	16.9503 -	9.9219 -	26.2 -	291.562 -
3 water/roller	7.2720 -	14.8439 -	21.8 -	246.613 -
LSD P=.05	29.29498	12.25604	9.15	136.1547
Standard Deviation	47.88890	20.03512	14.96	222.5739
CV	507.07943	216.88772	61.57	79.7901
TABLE OF B (Cover Crop) MEANS				
1 cereal rye	1.4379 b	4.1958 b	26.0 a	306.367 a
2 spring oats	0.3002 b	3.1375 b	25.8 a	288.794 a
3 cereal rye;spring oats	0.1548 b	1.8210 b	27.4 a	326.788 a
4 No Cover	35.8833 a	27.7958 a	18.0 b	193.849 b
LSD P=.05	25.32798	8.64821	4.19	50.7399
Standard Deviation	42.76118	14.60075	7.08	85.6641
CV	452.78372	158.05870	29.14	30.7096
TABLE OF C (Residual Herbicide) MEANS				
1 Reflex;Dual Magnum	8.5439 -	6.1355 b	26.0 a	300.634 a
2 No herbicide	10.3443 -	12.3396 a	22.6 b	257.265 b
LSD P=.05	11.93481	4.24190	2.15	30.9009
Standard Deviation	28.82923	10.24656	5.18	74.6430
CV	305.26298	110.92287	21.34	26.7586
TABLE OF A (Termination Herbicide) B (Cover Crop) MEANS				
1 Gramoxone SL 2.0 1 cereal rye	0.0888 -	0.1375 -	26.4 -	329.638 -
2 Select Max 1 cereal rye	1.8125 -	6.7625 -	30.8 -	344.200 -
3 water/roller 1 cereal rye	2.4125 -	5.6875 -	20.9 -	245.263 -
1 Gramoxone SL 2.0 2 spring oats	0.0125 -	0.0250 -	26.3 -	306.581 -
2 Select Max 2 spring oats	0.6381 -	3.0500 -	24.9 -	271.700 -
3 water/roller 2 spring oats	0.2500 -	6.3375 -	26.4 -	288.100 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats	0.0006 -	0.0000 -	27.3 -	342.450 -
2 Select Max 3 cereal rye;spring oats	0.2631 -	2.3625 -	29.0 -	328.125 -
3 water/roller 3 cereal rye;spring oats	0.2006 -	3.1006 -	25.9 -	309.788 -
1 Gramoxone SL 2.0 4 No Cover	16.3375 -	11.6250 -	19.6 -	216.025 -
2 Select Max 4 No Cover	65.0875 -	27.5125 -	20.0 -	222.221 -
3 water/roller 4 No Cover	26.2250 -	44.2500 -	14.3 -	143.300 -
LSD P=.05	43.86934	14.97914	7.26	87.8841
Standard Deviation	42.76118	14.60075	7.08	85.6641

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
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University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed	W, Weed		
Pest Code	AMACH	GENERAL		
Pest Name	smooth pigweed			
Crop Type, Code			C, CITLA	C, CITLA
Crop Name			Watermelon	Watermelon
Rating Date	Aug-2-2022	Aug-2-2022	Sep-7-2022	Sep-7-2022
Rating Type	BIOMASS	BIOMASS	TOTAL COUNT	Total Weigh
Rating Unit/Min/Max	/0.25m2, -, -	/0.25m2, -, -	no./2 r, -, -	LB, -, -
Data Entry Date	Aug-9-2022	Aug-9-2022	Sep-14-2022	Sep-14-2022
Days After First/Last Applic.	21, 20	21, 20	57, 56	57, 56
Trt-Eval Interval	21 DA-A	21 DA-A	57 DA-A	57 DA-A
Level Description	16	17	19	20
CV	452.78372	158.05870	29.14	30.7096
TABLE OF A (Termination Herbicide) C (Residual Herbicide) MEANS				
1 Gramoxone SL 2.0 1 Reflex;Dual Magnum	0.0253 -	0.8063 -	26.4 ab	314.266 -
2 Select Max 1 Reflex;Dual Magnum	21.6188 -	5.4813 -	29.9 a	337.436 -
3 water/roller 1 Reflex;Dual Magnum	3.9875 -	12.1191 -	21.7 b	250.200 -
1 Gramoxone SL 2.0 2 No herbicide	8.1944 -	5.0875 -	23.3 ab	283.081 -
2 Select Max 2 No herbicide	12.2819 -	14.3625 -	22.4 ab	245.688 -
3 water/roller 2 No herbicide	10.5566 -	17.5688 -	22.0 ab	243.025 -
LSD P=.05	20.67169	7.34719	3.72	53.5220
Standard Deviation	28.82923	10.24656	5.18	74.6430
CV	305.26298	110.92287	21.34	26.7586
TABLE OF B (Cover Crop) C (Residual Herbicide) MEANS				
1 cereal rye 1 Reflex;Dual Magnum	0.0088 -	1.8000 -	27.9 -	328.392 -
2 spring oats 1 Reflex;Dual Magnum	0.1000 -	0.0667 -	27.0 -	292.288 -
3 cereal rye;spring oats 1 Reflex;Dual Magnum	0.1000 -	0.7088 -	28.7 -	350.150 -
4 No Cover 1 Reflex;Dual Magnum	33.9667 -	21.9667 -	20.5 -	231.706 -
1 cereal rye 2 No herbicide	2.8671 -	6.5917 -	24.1 -	284.342 -
2 spring oats 2 No herbicide	0.5004 -	6.2083 -	24.7 -	285.300 -
3 cereal rye;spring oats 2 No herbicide	0.2096 -	2.9333 -	26.1 -	303.425 -
4 No Cover 2 No herbicide	37.8000 -	33.6250 -	15.4 -	155.992 -
LSD P=.05	23.86962	8.48380	4.29	61.8018
Standard Deviation	28.82923	10.24656	5.18	74.6430
CV	305.26298	110.92287	21.34	26.7586
TABLE OF A (Termination Herbicide) B (Cover Crop) C (Residual Herbicide) MEANS				
1 Gramoxone SL 2.0 1 cereal rye 1 Reflex;Dual Magnum	0.0263 -	0.0750 -	25.0 -	314.325 -
2 Select Max 1 cereal rye 1 Reflex;Dual Magnum	0.0000 -	3.4250 -	37.0 -	411.900 -
3 water/roller 1 cereal rye 1 Reflex;Dual Magnum	0.0000 -	1.9000 -	21.8 -	258.950 -
1 Gramoxone SL 2.0 2 spring oats 1 Reflex;Dual Magnum	0.0000 -	0.0000 -	27.5 -	298.163 -
2 Select Max 2 spring oats 1 Reflex;Dual Magnum	0.3000 -	0.2000 -	28.0 -	300.225 -

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University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed	W, Weed		
Pest Code	AMACH	GENERAL		
Pest Name	smooth pigweed			
Crop Type, Code			C, CITLA	C, CITLA
Crop Name			Watermelon	Watermelon
Rating Date	Aug-2-2022	Aug-2-2022	Sep-7-2022	Sep-7-2022
Rating Type	BIOMASS	BIOMASS	TOTAL COUNT	Total Weigh
Rating Unit/Min/Max	/0.25m2, -, -	/0.25m2, -, -	no./2 r, -, -	LB, -, -
Data Entry Date	Aug-9-2022	Aug-9-2022	Sep-14-2022	Sep-14-2022
Days After First/Last Applic.	21, 20	21, 20	57, 56	57, 56
Trt-Eval Interval	21 DA-A	21 DA-A	57 DA-A	57 DA-A
Level Description	16	17	19	20
3 water/roller 2 spring oats 1 Reflex;Dual Magnum	0.0000 -	0.0000 -	25.5 -	278.475 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 1 Reflex;Dual Magnum	0.0000 -	0.0000 -	28.5 -	355.925 -
2 Select Max 3 cereal rye;spring oats 1 Reflex;Dual Magnum	0.0000 -	0.2250 -	33.0 -	390.700 -
3 water/roller 3 cereal rye;spring oats 1 Reflex;Dual Magnum	0.3000 -	1.9013 -	24.5 -	303.825 -
1 Gramoxone SL 2.0 4 No Cover 1 Reflex;Dual Magnum	0.0750 -	3.1500 -	24.8 -	288.650 -
2 Select Max 4 No Cover 1 Reflex;Dual Magnum	86.1750 -	18.0750 -	21.8 -	246.918 -
3 water/roller 4 No Cover 1 Reflex;Dual Magnum	15.6500 -	44.6750 -	15.0 -	159.550 -
1 Gramoxone SL 2.0 1 cereal rye 2 No herbicide	0.1513 -	0.2000 -	27.8 -	344.950 -
2 Select Max 1 cereal rye 2 No herbicide	3.6250 -	10.1000 -	24.5 -	276.500 -
3 water/roller 1 cereal rye 2 No herbicide	4.8250 -	9.4750 -	20.0 -	231.575 -
1 Gramoxone SL 2.0 2 spring oats 2 No herbicide	0.0250 -	0.0500 -	25.0 -	315.000 -
2 Select Max 2 spring oats 2 No herbicide	0.9763 -	5.9000 -	21.8 -	243.175 -
3 water/roller 2 spring oats 2 No herbicide	0.5000 -	12.6750 -	27.3 -	297.725 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 2 No herbicide	0.0013 -	0.0000 -	26.0 -	328.975 -
2 Select Max 3 cereal rye;spring oats 2 No herbicide	0.5263 -	4.5000 -	25.0 -	265.550 -
3 water/roller 3 cereal rye;spring oats 2 No herbicide	0.1013 -	4.3000 -	27.3 -	315.750 -
1 Gramoxone SL 2.0 4 No Cover 2 No herbicide	32.6000 -	20.1000 -	14.5 -	143.400 -
2 Select Max 4 No Cover 2 No herbicide	44.0000 -	36.9500 -	18.3 -	197.525 -
3 water/roller 4 No Cover 2 No herbicide	36.8000 -	43.8250 -	13.5 -	127.050 -
LSD P=.05	41.34339	14.69437	7.44	107.0439

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
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University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed	W, Weed		
Pest Code	AMACH	GENERAL		
Pest Name	smooth pigweed			
Crop Type, Code			C, CITLA	C, CITLA
Crop Name			Watermelon	Watermelon
Rating Date	Aug-2-2022	Aug-2-2022	Sep-7-2022	Sep-7-2022
Rating Type	BIOMASS	BIOMASS	TOTAL COUNT	Total Weigh
Rating Unit/Min/Max	/0.25m2, -, -	/0.25m2, -, -	no./2 r, -, -	LB, -, -
Data Entry Date	Aug-9-2022	Aug-9-2022	Sep-14-2022	Sep-14-2022
Days After First/Last Applic.	21, 20	21, 20	57, 56	57, 56
Trt-Eval Interval	21 DA-A	21 DA-A	57 DA-A	57 DA-A
Level Description	16	17	19	20
Standard Deviation	28.82923	10.24656	5.18	74.6430
CV	305.26298	110.92287	21.34	26.7586

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type Pest Code Pest Name Crop Type, Code Crop Name Rating Date Rating Type Rating Unit/Min/Max Data Entry Date Days After First/Last Applic. Trt-Eval Interval	C, CITLA Watermelon Sep-7-2022 TTL AGV WT LB, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 MKT COUNT no./2 r, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 TTL MKT WT no./2 r, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 AVG MK WT LB, -, - Sep-14-2022 57, 56 57 DA-A
Level Description	21	22	23	24
TABLE OF R MEANS Replicate 1	11.965	20.5	279.81	13.155
Replicate 2	11.083	17.7	225.98	12.717
Replicate 3	11.738	20.3	262.63	12.775
Replicate 4	10.298	15.7	198.64	12.171
TABLE OF A (Termination Herbicide) MEANS 1 Gramoxone SL 2.0	11.849 -	19.8 -	264.81 -	13.156 -
2 Select Max	11.213 -	19.9 -	249.51 -	12.532 -
3 water/roller	10.752 -	15.9 -	210.97 -	12.425 -
LSD P=.05	2.0637	9.99	143.763	1.6310
Standard Deviation	3.3735	16.33	235.011	2.6662
CV	29.9309	88.12	97.206	20.9861
TABLE OF B (Cover Crop) MEANS 1 cereal rye	11.832 a	21.3 a	273.93 a	12.925 ab
2 spring oats	11.065 b	19.2 a	248.03 a	12.405 bc
3 cereal rye;spring oats	11.738 a	21.0 a	284.30 a	13.225 a
4 No Cover	10.450 b	12.8 b	160.80 b	12.263 c
LSD P=.05	0.6260	3.32	47.917	0.6398
Standard Deviation	1.0568	5.61	80.898	1.0802
CV	9.3763	30.26	33.461	8.5027
TABLE OF C (Residual Herbicide) MEANS 1 Reflex;Dual Magnum	11.418 -	20.1 a	260.87 a	12.863 -
2 No herbicide	11.124 -	17.0 b	222.66 b	12.546 -
LSD P=.05	0.5011	2.07	32.281	0.4063
Standard Deviation	1.2105	5.00	77.977	0.9816
CV	10.7398	26.98	32.253	7.7261
TABLE OF A (Termination Herbicide) B (Cover Crop) MEANS 1 Gramoxone SL 2.0 1 cereal rye	12.476 -	23.9 -	307.06 -	13.338 -
2 Select Max 1 cereal rye	11.700 -	24.4 -	304.88 -	12.500 -
3 water/roller 1 cereal rye	11.319 -	15.5 -	209.86 -	12.938 -
1 Gramoxone SL 2.0 2 spring oats	11.583 -	20.1 -	263.80 -	12.849 -
2 Select Max 2 spring oats	10.913 -	19.0 -	231.78 -	12.241 -
3 water/roller 2 spring oats	10.700 -	18.4 -	248.51 -	12.125 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats	12.413 -	21.4 -	307.26 -	13.838 -
2 Select Max 3 cereal rye;spring oats	11.163 -	20.9 -	272.33 -	13.100 -
3 water/roller 3 cereal rye;spring oats	11.638 -	20.6 -	273.33 -	12.738 -
1 Gramoxone SL 2.0 4 No Cover	10.925 -	14.0 -	181.13 -	12.600 -
2 Select Max 4 No Cover	11.075 -	15.3 -	189.08 -	12.288 -
3 water/roller 4 No Cover	9.350 -	9.0 -	112.19 -	11.900 -
LSD P=.05	1.0842	5.75	82.995	1.1082
Standard Deviation	1.0568	5.61	80.898	1.0802

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type Pest Code Pest Name Crop Type, Code Crop Name Rating Date Rating Type Rating Unit/Min/Max Data Entry Date Days After First/Last Applic. Trt-Eval Interval	C, CITLA Watermelon Sep-7-2022 TTL AGV WT LB, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 MKT COUNT no./2 r, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 TTL MKT WT no./2 r, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 AVG MK WT LB, -, - Sep-14-2022 57, 56 57 DA-A
Level Description	21	22	23	24
CV	9.3763	30.26	33.461	8.5027
TABLE OF A (Termination Herbicide) C (Residual Herbicide) MEANS				
1 Gramoxone SL 2.0 1 Reflex;Dual Magnum	11.774 -	20.5 -	273.56 -	13.350 -
2 Select Max 1 Reflex;Dual Magnum	11.500 -	23.3 -	293.58 -	12.621 -
3 water/roller 1 Reflex;Dual Magnum	10.981 -	16.4 -	215.47 -	12.619 -
1 Gramoxone SL 2.0 2 No herbicide	11.924 -	19.2 -	256.07 -	12.962 -
2 Select Max 2 No herbicide	10.925 -	16.4 -	205.45 -	12.444 -
3 water/roller 2 No herbicide	10.522 -	15.3 -	206.48 -	12.231 -
LSD P=.05	0.8680	3.59	55.913	0.7038
Standard Deviation	1.2105	5.00	77.977	0.9816
CV	10.7398	26.98	32.253	7.7261
TABLE OF B (Cover Crop) C (Residual Herbicide) MEANS				
1 cereal rye 1 Reflex;Dual Magnum	12.001 -	23.0 -	293.78 -	12.933 -
2 spring oats 1 Reflex;Dual Magnum	10.906 -	19.5 -	240.08 -	12.394 -
3 cereal rye;spring oats 1 Reflex;Dual Magnum	12.000 -	22.7 -	310.88 -	13.508 -
4 No Cover 1 Reflex;Dual Magnum	10.767 -	15.2 -	198.73 -	12.617 -
1 cereal rye 2 No herbicide	11.663 -	19.5 -	254.08 -	12.917 -
2 spring oats 2 No herbicide	11.224 -	18.8 -	255.98 -	12.416 -
3 cereal rye;spring oats 2 No herbicide	11.475 -	19.3 -	257.73 -	12.942 -
4 No Cover 2 No herbicide	10.133 -	10.3 -	122.87 -	11.908 -
LSD P=.05	1.0022	4.14	64.563	0.8127
Standard Deviation	1.2105	5.00	77.977	0.9816
CV	10.7398	26.98	32.253	7.7261
TABLE OF A (Termination Herbicide) B (Cover Crop) C (Residual Herbicide) MEANS				
1 Gramoxone SL 2.0 1 cereal rye 1 Reflex;Dual Magnum	12.403 -	23.5 -	293.75 -	13.275 -
2 Select Max 1 cereal rye 1 Reflex;Dual Magnum	12.150 -	29.3 -	362.70 -	12.400 -
3 water/roller 1 cereal rye 1 Reflex;Dual Magnum	11.450 -	16.3 -	224.90 -	13.125 -
1 Gramoxone SL 2.0 2 spring oats 1 Reflex;Dual Magnum	11.018 -	18.5 -	236.73 -	12.800 -
2 Select Max 2 spring oats 1 Reflex;Dual Magnum	10.875 -	21.3 -	253.23 -	12.158 -

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type Pest Code Pest Name Crop Type, Code Crop Name Rating Date Rating Type Rating Unit/Min/Max Data Entry Date Days After First/Last Applic. Trt-Eval Interval	C, CITLA Watermelon Sep-7-2022 TTL AGV WT LB, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 MKT COUNT no./2 r, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 TTL MKT WT no./2 r, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 AVG MK WT LB, -, - Sep-14-2022 57, 56 57 DA-A
Level Description	21	22	23	24
3 water/roller 2 spring oats 1 Reflex;Dual Magnum	10.825 -	18.8 -	230.28 -	12.225 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 1 Reflex;Dual Magnum	12.175 -	22.0 -	317.08 -	14.025 -
2 Select Max 3 cereal rye;spring oats 1 Reflex;Dual Magnum	11.775 -	25.5 -	341.73 -	13.575 -
3 water/roller 3 cereal rye;spring oats 1 Reflex;Dual Magnum	12.050 -	20.5 -	273.85 -	12.925 -
1 Gramoxone SL 2.0 4 No Cover 1 Reflex;Dual Magnum	11.500 -	18.0 -	246.68 -	13.300 -
2 Select Max 4 No Cover 1 Reflex;Dual Magnum	11.200 -	17.3 -	216.65 -	12.350 -
3 water/roller 4 No Cover 1 Reflex;Dual Magnum	9.600 -	10.3 -	132.85 -	12.200 -
1 Gramoxone SL 2.0 1 cereal rye 2 No herbicide	12.550 -	24.3 -	320.38 -	13.400 -
2 Select Max 1 cereal rye 2 No herbicide	11.250 -	19.5 -	247.05 -	12.600 -
3 water/roller 1 cereal rye 2 No herbicide	11.188 -	14.8 -	194.83 -	12.750 -
1 Gramoxone SL 2.0 2 spring oats 2 No herbicide	12.148 -	21.8 -	290.88 -	12.898 -
2 Select Max 2 spring oats 2 No herbicide	10.950 -	16.8 -	210.33 -	12.325 -
3 water/roller 2 spring oats 2 No herbicide	10.575 -	18.0 -	266.75 -	12.025 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 2 No herbicide	12.650 -	20.8 -	297.45 -	13.650 -
2 Select Max 3 cereal rye;spring oats 2 No herbicide	10.550 -	16.3 -	202.93 -	12.625 -
3 water/roller 3 cereal rye;spring oats 2 No herbicide	11.225 -	20.8 -	272.80 -	12.550 -
1 Gramoxone SL 2.0 4 No Cover 2 No herbicide	10.350 -	10.0 -	115.58 -	11.900 -
2 Select Max 4 No Cover 2 No herbicide	10.950 -	13.3 -	161.50 -	12.225 -
3 water/roller 4 No Cover 2 No herbicide	9.100 -	7.8 -	91.53 -	11.600 -
LSD P=.05	1.7359	7.17	111.826	1.4076

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type				
Pest Code				
Pest Name				
Crop Type, Code	C, CITLA	C, CITLA	C, CITLA	C, CITLA
Crop Name	Watermelon	Watermelon	Watermelon	Watermelon
Rating Date	Sep-7-2022	Sep-7-2022	Sep-7-2022	Sep-7-2022
Rating Type	TTL AGV WT	MKT COUNT	TTL MKT WT	AVG MK WT
Rating Unit/Min/Max	LB, -, -	no./2 r, -, -	no./2 r, -, -	LB, -, -
Data Entry Date	Sep-14-2022	Sep-14-2022	Sep-14-2022	Sep-14-2022
Days After First/Last Applic.	57, 56	57, 56	57, 56	57, 56
Trt-Eval Interval	57 DA-A	57 DA-A	57 DA-A	57 DA-A
Level Description	21	22	23	24
Standard Deviation	1.2105	5.00	77.977	0.9816
CV	10.7398	26.98	32.253	7.7261

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type Pest Code Pest Name Crop Type, Code Crop Name Rating Date Rating Type Rating Unit/Min/Max Data Entry Date Days After First/Last Applic. Trt-Eval Interval	C, CITLA Watermelon Sep-7-2022 ALL YIELD LB/A, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 ALL YIELD CWT/A, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 MKT YIELD LB/A, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 MKT YIELD CWT/A, -, - Sep-14-2022 57, 56 57 DA-A
Level Description	25	26	27	28
TABLE OF R MEANS Replicate 1	44732.62	447.33	39970.60	399.70
Replicate 2	38256.43	382.57	32280.48	322.81
Replicate 3	41651.43	416.51	37515.42	375.16
Replicate 4	34745.07	347.45	28373.82	283.75
TABLE OF A (Termination Herbicide) MEANS 1 Gramoxone SL 2.0	42663.85 -	426.64 -	37827.41 -	378.28 -
2 Select Max	41648.12 -	416.48 -	35642.87 -	356.44 -
3 water/roller	35227.19 -	352.28 -	30134.96 -	301.35 -
LSD P=.05	19451.072	194.505	20537.621	205.378
Standard Deviation	31796.931	317.960	33573.128	335.735
CV	79.799	79.796	97.215	97.215
TABLE OF B (Cover Crop) MEANS 1 cereal rye	43763.45 a	437.64 a	39130.08 a	391.30 a
2 spring oats	41252.15 a	412.52 a	35430.30 a	354.31 a
3 cereal rye;spring oats	46680.84 a	466.81 a	40612.56 a	406.13 a
4 No Cover	27689.11 b	276.89 b	22967.38 b	229.68 b
LSD P=.05	7248.492	72.483	6844.195	68.444
Standard Deviation	12237.615	122.372	11555.041	115.554
CV	30.712	30.711	33.459	33.460
TABLE OF C (Residual Herbicide) MEANS 1 Reflex;Dual Magnum	42944.68 a	429.45 a	37264.26 a	372.65 a
2 No herbicide	36748.10 b	367.48 b	31805.89 b	318.06 b
LSD P=.05	4414.533	44.145	4611.817	46.122
Standard Deviation	10663.562	106.634	11140.113	111.409
CV	26.762	26.761	32.257	32.259
TABLE OF A (Termination Herbicide) B (Cover Crop) MEANS 1 Gramoxone SL 2.0 1 cereal rye	47088.77 -	470.89 -	43861.82 -	438.61 -
2 Select Max 1 cereal rye	49167.30 -	491.69 -	43553.05 -	435.54 -
3 water/roller 1 cereal rye	35034.29 -	350.35 -	29975.37 -	299.75 -
1 Gramoxone SL 2.0 2 spring oats	43793.75 -	437.94 -	37682.14 -	376.83 -
2 Select Max 2 spring oats	38810.35 -	388.10 -	33109.47 -	331.10 -
3 water/roller 2 spring oats	41152.33 -	411.53 -	35499.29 -	355.00 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats	48917.52 -	489.16 -	43894.28 -	438.94 -
2 Select Max 3 cereal rye;spring oats	46871.60 -	468.73 -	38901.44 -	389.03 -
3 water/roller 3 cereal rye;spring oats	44253.39 -	442.55 -	39041.97 -	390.41 -
1 Gramoxone SL 2.0 4 No Cover	30855.37 -	308.56 -	25871.42 -	258.73 -
2 Select Max 4 No Cover	31743.23 -	317.43 -	27007.50 -	270.09 -
3 water/roller 4 No Cover	20468.74 -	204.69 -	16023.21 -	160.24 -
LSD P=.05	12554.756	125.544	11854.493	118.549
Standard Deviation	12237.615	122.372	11555.041	115.554

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type Pest Code Pest Name Crop Type, Code Crop Name Rating Date Rating Type Rating Unit/Min/Max Data Entry Date Days After First/Last Applic. Trt-Eval Interval	C, CITLA Watermelon Sep-7-2022 ALL YIELD LB/A, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 ALL YIELD CWT/A, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 MKT YIELD LB/A, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 MKT YIELD CWT/A, -, - Sep-14-2022 57, 56 57 DA-A
Level Description	25	26	27	28
CV	30.712	30.711	33.459	33.460
TABLE OF A (Termination Herbicide) C (Residual Herbicide) MEANS				
1 Gramoxone SL 2.0 1 Reflex;Dual Magnum	44891.98 -	448.93 -	39076.62 -	390.76 -
2 Select Max 1 Reflex;Dual Magnum	48201.96 -	482.03 -	41937.68 -	419.39 -
3 water/roller 1 Reflex;Dual Magnum	35740.09 -	357.41 -	30778.50 -	307.79 -
1 Gramoxone SL 2.0 2 No herbicide	40435.72 -	404.35 -	36578.21 -	365.79 -
2 Select Max 2 No herbicide	35094.28 -	350.94 -	29348.05 -	293.49 -
3 water/roller 2 No herbicide	34714.28 -	347.15 -	29491.42 -	294.91 -
LSD P=.05	7646.195	76.461	7987.901	79.885
Standard Deviation	10663.562	106.634	11140.113	111.409
CV	26.762	26.761	32.257	32.259
TABLE OF B (Cover Crop) C (Residual Herbicide) MEANS				
1 cereal rye 1 Reflex;Dual Magnum	46910.36 -	469.12 -	41966.93 -	419.67 -
2 spring oats 1 Reflex;Dual Magnum	41751.91 -	417.51 -	34293.58 -	342.94 -
3 cereal rye;spring oats 1 Reflex;Dual Magnum	50018.58 -	500.19 -	44409.41 -	444.09 -
4 No Cover 1 Reflex;Dual Magnum	33097.85 -	330.99 -	28387.14 -	283.88 -
1 cereal rye 2 No herbicide	40616.55 -	406.17 -	36293.23 -	362.93 -
2 spring oats 2 No herbicide	40752.38 -	407.53 -	36567.02 -	365.68 -
3 cereal rye;spring oats 2 No herbicide	43343.10 -	433.43 -	36815.71 -	368.16 -
4 No Cover 2 No herbicide	22280.37 -	222.79 -	17547.62 -	175.48 -
LSD P=.05	8829.065	88.289	9223.634	92.243
Standard Deviation	10663.562	106.634	11140.113	111.409
CV	26.762	26.761	32.257	32.259
TABLE OF A (Termination Herbicide) B (Cover Crop) C (Residual Herbicide) MEANS				
1 Gramoxone SL 2.0 1 cereal rye 1 Reflex;Dual Magnum	44901.80 -	449.03 -	41960.75 -	419.60 -
2 Select Max 1 cereal rye 1 Reflex;Dual Magnum	58837.48 -	588.40 -	51814.31 -	518.15 -
3 water/roller 1 cereal rye 1 Reflex;Dual Magnum	36991.80 -	369.93 -	32125.73 -	321.25 -
1 Gramoxone SL 2.0 2 spring oats 1 Reflex;Dual Magnum	42592.88 -	425.93 -	33814.30 -	338.13 -
2 Select Max 2 spring oats 1 Reflex;Dual Magnum	42885.70 -	428.85 -	36173.20 -	361.75 -

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
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University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type Pest Code Pest Name Crop Type, Code Crop Name Rating Date Rating Type Rating Unit/Min/Max Data Entry Date Days After First/Last Applic. Trt-Eval Interval	C, CITLA Watermelon Sep-7-2022 ALL YIELD LB/A, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 ALL YIELD CWT/A, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 MKT YIELD LB/A, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 MKT YIELD CWT/A, -, - Sep-14-2022 57, 56 57 DA-A
Level Description	25	26	27	28
3 water/roller 2 spring oats 1 Reflex;Dual Magnum	39777.15 -	397.75 -	32893.23 -	328.95 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 1 Reflex;Dual Magnum	50842.88 -	508.43 -	45295.70 -	452.95 -
2 Select Max 3 cereal rye;spring oats 1 Reflex;Dual Magnum	55812.51 -	558.13 -	48814.30 -	488.15 -
3 water/roller 3 cereal rye;spring oats 1 Reflex;Dual Magnum	43400.35 -	434.03 -	39118.23 -	391.18 -
1 Gramoxone SL 2.0 4 No Cover 1 Reflex;Dual Magnum	41230.35 -	412.33 -	35235.70 -	352.38 -
2 Select Max 4 No Cover 1 Reflex;Dual Magnum	35272.15 -	352.73 -	30948.90 -	309.50 -
3 water/roller 4 No Cover 1 Reflex;Dual Magnum	22791.05 -	227.93 -	18976.80 -	189.78 -
1 Gramoxone SL 2.0 1 cereal rye 2 No herbicide	49275.73 -	492.75 -	45762.88 -	457.63 -
2 Select Max 1 cereal rye 2 No herbicide	39497.13 -	394.98 -	35291.80 -	352.93 -
3 water/roller 1 cereal rye 2 No herbicide	33076.78 -	330.78 -	27825.00 -	278.25 -
1 Gramoxone SL 2.0 2 spring oats 2 No herbicide	44994.63 -	449.95 -	41549.98 -	415.53 -
2 Select Max 2 spring oats 2 No herbicide	34735.00 -	347.35 -	30045.73 -	300.45 -
3 water/roller 2 spring oats 2 No herbicide	42527.50 -	425.30 -	38105.35 -	381.05 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 2 No herbicide	46992.15 -	469.90 -	42492.85 -	424.93 -
2 Select Max 3 cereal rye;spring oats 2 No herbicide	37930.70 -	379.33 -	28988.58 -	289.90 -
3 water/roller 3 cereal rye;spring oats 2 No herbicide	45106.43 -	451.08 -	38965.70 -	389.65 -
1 Gramoxone SL 2.0 4 No Cover 2 No herbicide	20480.38 -	204.80 -	16507.13 -	165.08 -
2 Select Max 4 No Cover 2 No herbicide	28214.30 -	282.13 -	23066.10 -	230.68 -
3 water/roller 4 No Cover 2 No herbicide	18146.43 -	181.45 -	13069.63 -	130.70 -
LSD P=.05	15292.390	152.921	15975.802	159.770

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type				
Pest Code				
Pest Name				
Crop Type, Code	C, CITLA	C, CITLA	C, CITLA	C, CITLA
Crop Name	Watermelon	Watermelon	Watermelon	Watermelon
Rating Date	Sep-7-2022	Sep-7-2022	Sep-7-2022	Sep-7-2022
Rating Type	ALL YIELD	ALL YIELD	MKT YIELD	MKT YIELD
Rating Unit/Min/Max	LB/A, -, -	CWT/A, -, -	LB/A, -, -	CWT/A, -, -
Data Entry Date	Sep-14-2022	Sep-14-2022	Sep-14-2022	Sep-14-2022
Days After First/Last Applic.	57, 56	57, 56	57, 56	57, 56
Trt-Eval Interval	57 DA-A	57 DA-A	57 DA-A	57 DA-A
Level Description	25	26	27	28
Standard Deviation	10663.562	106.634	11140.113	111.409
CV	26.762	26.761	32.257	32.259

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type		
Pest Code		
Pest Name		
Crop Type, Code	C, CITLA	C, CITLA
Crop Name	Watermelon	Watermelon
Rating Date	Sep-7-2022	Sep-7-2022
Rating Type	All Yield 2	Mkt Yield 2
Rating Unit/Min/Max	LB/A, -, -	LB/A, -, -
Data Entry Date	Sep-14-2022	Sep-14-2022
Days After First/Last Applic.	57, 56	57, 56
Trt-Eval Interval	57 DA-A	57 DA-A
Level Description	30	31
TABLE OF R MEANS		
Replicate 1	23910.24	26299.03
Replicate 2	22177.81	25445.64
Replicate 3	23469.83	25554.99
Replicate 4	20595.75	24347.25
TABLE OF A (Termination Herbicide) MEANS		
1 Gramoxone SL 2.0	23696.91 -	26316.32 -
2 Select Max	22426.52 -	25072.16 -
3 water/roller	21491.78 -	24846.71 -
LSD P=.05	4145.131	3248.987
Standard Deviation	6776.102	5311.162
CV	30.065	20.900
TABLE OF B (Cover Crop) MEANS		
1 cereal rye	23666.83 a	25853.96 ab
2 spring oats	22135.46 b	24816.53 bc
3 cereal rye;spring oats	23472.86 a	26462.95 a
4 No Cover	20878.47 c	24513.48 c
LSD P=.05	1237.495	1276.085
Standard Deviation	2089.261	2154.413
CV	9.270	8.478
TABLE OF C (Residual Herbicide) MEANS		
1 Reflex;Dual Magnum	22832.19 -	25734.74 -
2 No herbicide	22244.63 -	25088.72 -
LSD P=.05	1000.242	810.094
Standard Deviation	2416.143	1956.830
CV	10.720	7.700
TABLE OF A (Termination Herbicide) B (Cover Crop) MEANS		
1 Gramoxone SL 2.0 1 cereal rye	24956.78 -	26702.52 -
2 Select Max 1 cereal rye	23389.54 -	25013.95 -
3 water/roller 1 cereal rye	22654.16 -	25845.42 -
1 Gramoxone SL 2.0 2 spring oats	23167.45 -	25701.72 -
2 Select Max 2 spring oats	21847.81 -	24496.25 -
3 water/roller 2 spring oats	21391.11 -	24251.63 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats	24833.05 -	27652.77 -
2 Select Max 3 cereal rye;spring oats	22337.18 -	26226.19 -
3 water/roller 3 cereal rye;spring oats	23248.36 -	25509.90 -
1 Gramoxone SL 2.0 4 No Cover	21830.38 -	25208.28 -
2 Select Max 4 No Cover	22131.55 -	24552.24 -
3 water/roller 4 No Cover	18673.49 -	23779.91 -
LSD P=.05	2143.405	2210.245
Standard Deviation	2089.261	2154.413

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
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University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type		
Pest Code		
Pest Name		
Crop Type, Code	C, CITLA	C, CITLA
Crop Name	Watermelon	Watermelon
Rating Date	Sep-7-2022	Sep-7-2022
Rating Type	All Yield 2	Mkt Yield 2
Rating Unit/Min/Max	LB/A, -, -	LB/A, -, -
Data Entry Date	Sep-14-2022	Sep-14-2022
Days After First/Last Applic.	57, 56	57, 56
Trt-Eval Interval	57 DA-A	57 DA-A
Level Description	30	31
CV	9.270	8.478
TABLE OF A (Termination Herbicide) C (Residual Herbicide) MEANS		
1 Gramoxone SL 2.0 1 Reflex;Dual Magnum	23548.00 -	26723.90 -
2 Select Max 1 Reflex;Dual Magnum	23011.26 -	25251.65 -
3 water/roller 1 Reflex;Dual Magnum	21937.30 -	25228.68 -
1 Gramoxone SL 2.0 2 No herbicide	23845.83 -	25908.73 -
2 Select Max 2 No herbicide	21841.78 -	24892.67 -
3 water/roller 2 No herbicide	21046.26 -	24464.75 -
LSD P=.05	1732.470	1403.124
Standard Deviation	2416.143	1956.830
CV	10.720	7.700
TABLE OF B (Cover Crop) C (Residual Herbicide) MEANS		
1 cereal rye 1 Reflex;Dual Magnum	23993.59 -	25884.59 -
2 spring oats 1 Reflex;Dual Magnum	21814.40 -	24812.22 -
3 cereal rye;spring oats 1 Reflex;Dual Magnum	24001.03 -	27012.70 -
4 No Cover 1 Reflex;Dual Magnum	21519.73 -	25229.47 -
1 cereal rye 2 No herbicide	23340.06 -	25823.34 -
2 spring oats 2 No herbicide	22456.52 -	24820.84 -
3 cereal rye;spring oats 2 No herbicide	22944.70 -	25913.20 -
4 No Cover 2 No herbicide	20237.22 -	23797.49 -
LSD P=.05	2000.484	1620.188
Standard Deviation	2416.143	1956.830
CV	10.720	7.700
TABLE OF A (Termination Herbicide) B (Cover Crop) C (Residual Herbicide) MEANS		
1 Gramoxone SL 2.0 1 cereal rye 1 Reflex;Dual Magnum	24790.45 -	26597.63 -
2 Select Max 1 cereal rye 1 Reflex;Dual Magnum	24280.53 -	24830.63 -
3 water/roller 1 cereal rye 1 Reflex;Dual Magnum	22909.80 -	26225.50 -
1 Gramoxone SL 2.0 2 spring oats 1 Reflex;Dual Magnum	22038.75 -	25628.60 -
2 Select Max 2 spring oats 1 Reflex;Dual Magnum	21768.55 -	24346.95 -

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University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

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Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

Pest Type Pest Code Pest Name Crop Type, Code Crop Name Rating Date Rating Type Rating Unit/Min/Max Data Entry Date Days After First/Last Applic. Trt-Eval Interval	C, CITLA Watermelon Sep-7-2022 All Yield 2 LB/A, -, - Sep-14-2022 57, 56 57 DA-A	C, CITLA Watermelon Sep-7-2022 Mkt Yield 2 LB/A, -, - Sep-14-2022 57, 56 57 DA-A
Level Description	30	31
3 water/roller 2 spring oats 1 Reflex;Dual Magnum	21635.90 -	24461.10 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 1 Reflex;Dual Magnum	24388.43 -	28018.08 -
2 Select Max 3 cereal rye;spring oats 1 Reflex;Dual Magnum	23572.03 -	27159.15 -
3 water/roller 3 cereal rye;spring oats 1 Reflex;Dual Magnum	24042.63 -	25860.88 -
1 Gramoxone SL 2.0 4 No Cover 1 Reflex;Dual Magnum	22974.38 -	26651.30 -
2 Select Max 4 No Cover 1 Reflex;Dual Magnum	22423.93 -	24669.85 -
3 water/roller 4 No Cover 1 Reflex;Dual Magnum	19160.88 -	24367.25 -
1 Gramoxone SL 2.0 1 cereal rye 2 No herbicide	25123.10 -	26807.40 -
2 Select Max 1 cereal rye 2 No herbicide	22498.55 -	25197.28 -
3 water/roller 1 cereal rye 2 No herbicide	22398.53 -	25465.33 -
1 Gramoxone SL 2.0 2 spring oats 2 No herbicide	24296.15 -	25774.83 -
2 Select Max 2 spring oats 2 No herbicide	21927.08 -	24645.55 -
3 water/roller 2 spring oats 2 No herbicide	21146.33 -	24042.15 -
1 Gramoxone SL 2.0 3 cereal rye;spring oats 2 No herbicide	25277.68 -	27287.45 -
2 Select Max 3 cereal rye;spring oats 2 No herbicide	21102.33 -	25293.23 -
3 water/roller 3 cereal rye;spring oats 2 No herbicide	22454.10 -	25158.93 -
1 Gramoxone SL 2.0 4 No Cover 2 No herbicide	20686.38 -	23765.25 -
2 Select Max 4 No Cover 2 No herbicide	21839.18 -	24434.63 -
3 water/roller 4 No Cover 2 No herbicide	18186.10 -	23192.58 -
LSD P=.05	3464.941	2806.248

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
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Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

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Investigator (Creator): Kurt Vollmer

Pest Type		
Pest Code		
Pest Name		
Crop Type, Code	C, CITLA	C, CITLA
Crop Name	Watermelon	Watermelon
Rating Date	Sep-7-2022	Sep-7-2022
Rating Type	All Yield 2	Mkt Yield 2
Rating Unit/Min/Max	LB/A, -, -	LB/A, -, -
Data Entry Date	Sep-14-2022	Sep-14-2022
Days After First/Last Applic.	57, 56	57, 56
Trt-Eval Interval	57 DA-A	57 DA-A
Level Description	30	31
Standard Deviation	2416.143	1956.830
CV	10.720	7.700

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
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Investigator (Creator): Kurt Vollmer

COMPLETE SPLIT-PLOT Least square estimation AOV For W Weed AMACH smooth pigweed Jul-6-2022 COUNT /0.25m2 Jul-6-2022 -6 -6 -6 DA-A (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	4568.489583				
R	3	82.864583	27.621528	1.210	0.3249	
A	2	66.895833	33.447917	1.528	0.2909	2.9
ERROR A	6	131.354167	21.892361			
B	3	3076.614583	1025.538194	44.939	0.0001	2.8
AB	6	78.104167	13.017361	0.570	0.7502	4.9
ERROR B	27	616.156250	22.820602			
C	1	19.260417	19.260417	1.673	0.2041	1.4
AC	2	10.645833	5.322917	0.462	0.6334	2.4
BC	3	13.364583	4.454861	0.387	0.7630	2.8
ABC	6	58.854167	9.809028	0.852	0.5388	4.9
ERROR C	36	414.375000	11.510417			

COMPLETE SPLIT-PLOT Least square estimation AOV For W Weed ERICA mare's-tail Jul-6-2022 COUNT /0.25m2 Jul-6-2022 -6 -6 -6 DA-A (Data Column 2)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	576.625000				
R	3	34.125000	11.375000	1.261	0.3075	
A	2	15.437500	7.718750	1.193	0.3662	1.6
ERROR A	6	38.812500	6.468750			
B	3	137.708333	45.902778	5.089	0.0064	1.8
AB	6	44.979167	7.496528	0.831	0.5565	3.1
ERROR B	27	243.562500	9.020833			
C	1	0.041667	0.041667	0.029	0.8667	0.5
AC	2	1.520833	0.760417	0.521	0.5981	0.9
BC	3	2.541667	0.847222	0.581	0.6313	1.0
ABC	6	5.395833	0.899306	0.617	0.7155	1.7
ERROR C	36	52.500000	1.458333			

COMPLETE SPLIT-PLOT Least square estimation AOV For W Weed VERPE Bird's-eye speedwell Jul-6-2022 COUNT /0.25m2 Jul-6-2022 -6 -6 -6 DA-A (Data Column 3)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	7765.989583				
R	3	14.364583	4.788194	0.062	0.9792	
A	2	153.583333	76.791667	0.501	0.6291	7.6
ERROR A	6	919.416667	153.236111			
B	3	3134.114583	1044.704861	13.596	0.0001	5.2
AB	6	340.416667	56.736111	0.738	0.6233	9.0
ERROR B	27	2074.593750	76.836806			
C	1	5.510417	5.510417	0.192	0.6637	2.2
AC	2	11.083333	5.541667	0.193	0.8251	3.8
BC	3	5.114583	1.704861	0.059	0.9807	4.4
ABC	6	75.416667	12.569444	0.438	0.8483	7.7
ERROR C	36	1032.375000	28.677083			

COMPLETE SPLIT-PLOT Least square estimation AOV For W Weed OTHER Jul-6-2022 COUNT /0.25m2 Jul-6-2022 -6 -6 -6 DA-A (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	1681.739583				
R	3	11.447917	3.815972	0.189	0.9027	
A	2	62.520833	31.260417	1.911	0.2279	2.5
ERROR A	6	98.145833	16.357639			
B	3	288.114583	96.038194	4.766	0.0086	2.7
AB	6	83.979167	13.996528	0.695	0.6560	4.6
ERROR B	27	544.031250	20.149306			
C	1	4.593750	4.593750	0.374	0.5444	1.4
AC	2	70.187500	35.093750	2.861	0.0703	2.5
BC	3	20.114583	6.704861	0.547	0.6537	2.9
ABC	6	56.979167	9.496528	0.774	0.5954	5.0
ERROR C	36	441.625000	12.267361			

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Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
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Investigator (Creator): Kurt Vollmer

COMPLETE SPLIT-PLOT Least square estimation AOV For W Weed TOTAL Jul-6-2022 COUNT /0.25m2 Jul-7-2022 -6 -6 -6 DA-A (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	12650.625000				
R	3	36.875000	12.291667	0.138	0.9367	
A	2	359.312500	179.656250	1.611	0.2753	6.5
ERROR A	6	668.937500	111.489583			
B	3	7112.375000	2370.791667	26.526	0.0001	5.6
AB	6	712.937500	118.822917	1.329	0.2784	9.7
ERROR B	27	2413.187500	89.377315			
C	1	0.000000	0.000000	0.000	1.0000	2.3
AC	2	87.062500	43.531250	1.470	0.2434	3.9
BC	3	31.083333	10.361111	0.350	0.7894	4.5
ABC	6	162.854167	27.142361	0.917	0.4944	7.8
ERROR C	36	1066.000000	29.611111			

COMPLETE SPLIT-PLOT Least square estimation AOV For C COVER Jul-25-2022 BIOMASS g Jul-26-2022 13 12 13 DA-A (Data Column 6)
Analysis will skip factor level B4 for column 6 - all B4 treatments are missing

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	71	271211.776528				
R	3	9200.820417	3066.940139	0.932	0.4455	
A	2	2579.078611	1289.539306	0.256	0.7819	43.38
ERROR A	6	30175.649167	5029.274861			
B	2	92047.943611	46023.971806	13.988	0.0002	34.79
AB	4	2129.100556	532.275139	0.162	0.9550	60.25
ERROR B	18	59222.409167	3290.133843			
C	1	3064.140139	3064.140139	1.385	0.2495	19.70
AC	2	7289.150278	3644.575139	1.647	0.2114	34.12
BC	2	3153.280278	1576.640139	0.713	0.4994	39.40
ABC	4	2611.180556	652.795139	0.295	0.8786	68.25
ERROR C	27	59739.023750	2212.556435			

COMPLETE SPLIT-PLOT Least square estimation AOV For W Weed AMACH smooth pigweed Jul-25-2022 COUNT /0.25m2 Jul-25-2022 13 12 13 DA-A (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	5792.958333				
R	3	165.708333	55.236111	1.259	0.3082	
A	2	278.583333	139.291667	3.596	0.0941	3.8
ERROR A	6	232.416667	38.736111			
B	3	404.375000	134.791667	3.072	0.0446	3.9
AB	6	124.250000	20.708333	0.472	0.8230	6.8
ERROR B	27	1184.625000	43.875000			
C	1	1040.166667	1040.166667	21.231	0.0001	2.9
AC	2	156.333333	78.166667	1.595	0.2168	5.0
BC	3	113.916667	37.972222	0.775	0.5156	5.8
ABC	6	328.833333	54.805556	1.119	0.3711	10.0
ERROR C	36	1763.750000	48.993056			

COMPLETE SPLIT-PLOT Least square estimation AOV For TOTAL BL Jul-25-2022 /0.25m2 Jul-25-2022 13 12 13 DA-A (Data Column 9)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	7577.406250				
R	3	84.864583	28.288194	0.553	0.6503	
A	2	295.562500	147.781250	3.425	0.1018	4.0
ERROR A	6	258.854167	43.142361			
B	3	1042.781250	347.593750	6.800	0.0015	4.2
AB	6	374.687500	62.447917	1.222	0.3260	7.3
ERROR B	27	1380.156250	51.116898			
C	1	1544.010417	1544.010417	31.177	0.0001	2.9
AC	2	193.145833	96.572917	1.950	0.1570	5.0
BC	3	208.031250	69.343750	1.400	0.2586	5.8
ABC	6	412.437500	68.739583	1.388	0.2460	10.1
ERROR C	36	1782.875000	49.524306			

COMPLETE SPLIT-PLOT Least square estimation AOV For BL EDG Jul-29-2022 CONTRO % 0 100 Aug-3-2022 17 16 17 DA-A (Data Column 11)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	125472.989583				
R	3	4818.114583	1606.038194	2.224	0.1083	
A	2	31116.083333	15558.041667	28.312	0.0009	14.3
ERROR A	6	3297.166667	549.527778			
B	3	37591.947917	12530.649306	17.354	0.0001	15.9
AB	6	15051.083333	2508.513889	3.474	0.0113	27.6
ERROR B	27	19495.093750	722.040509			
C	1	625.260417	625.260417	2.299	0.1382	6.8
AC	2	60.083333	30.041667	0.110	0.8957	11.8
BC	3	1461.531250	487.177083	1.791	0.1663	13.7
ABC	6	2165.250000	360.875000	1.327	0.2707	23.7
ERROR C	36	9791.375000	271.982639			

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Investigator (Creator): Kurt Vollmer

COMPLETE SPLIT-PLOT Least square estimation AOV For BL CTR Jul-29-2022 CONTRO % 0 100 Aug-3-2022 17 16 17 DA-A (Data Column 12)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	137728.958333				
R	3	871.375000	290.458333	0.430	0.7335	
A	2	19292.020833	9646.010417	18.430	0.0027	14.0
ERROR A	6	3140.312500	523.385417			
B	3	39757.208333	13252.402778	19.600	0.0001	15.4
AB	6	19562.229167	3260.371528	4.822	0.0018	26.7
ERROR B	27	18255.812500	676.141204			
C	1	450.666667	450.666667	0.531	0.4710	12.1
AC	2	106.270833	53.135417	0.063	0.9394	20.9
BC	3	1537.250000	512.416667	0.603	0.6170	24.1
ABC	6	4188.312500	698.052083	0.822	0.5603	41.8
ERROR C	36	30567.500000	849.097222			

COMPLETE SPLIT-PLOT Least square estimation AOV For W Weed G EDG Jul-29-2022 CONTRO % 0 100 Aug-3-2022 17 16 17 DA-A (Data Column 13)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	83373.739583				
R	3	2291.364583	763.788194	2.019	0.1350	
A	2	29674.020833	14837.010417	25.468	0.0012	14.8
ERROR A	6	3495.479167	582.579861			
B	3	15105.697917	5035.232639	13.308	0.0001	11.5
AB	6	15806.645833	2634.440972	6.963	0.0001	20.0
ERROR B	27	10216.031250	378.371528			
C	1	0.260417	0.260417	0.001	0.9698	5.5
AC	2	66.520833	33.260417	0.185	0.8317	9.6
BC	3	139.031250	46.343750	0.258	0.8551	11.1
ABC	6	114.312500	19.052083	0.106	0.9952	19.2
ERROR C	36	6464.375000	179.565972			

COMPLETE SPLIT-PLOT Least square estimation AOV For W Weed G CTR Jul-29-2022 CONTRO % 0 100 Aug-3-2022 17 16 17 DA-A (Data Column 14)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	80848.500000				
R	3	304.916667	101.638889	0.709	0.5551	
A	2	20234.312500	10117.156250	121.401	0.0001	5.6
ERROR A	6	500.020833	83.336806			
B	3	17559.583333	5853.194444	40.828	0.0001	7.1
AB	6	34151.854167	5691.975694	39.703	0.0001	12.3
ERROR B	27	3870.812500	143.363426			
C	1	77.041667	77.041667	0.791	0.3798	4.1
AC	2	119.520833	59.760417	0.613	0.5471	7.1
BC	3	162.708333	54.236111	0.557	0.6471	8.2
ABC	6	359.979167	59.996528	0.616	0.7162	14.2
ERROR C	36	3507.750000	97.437500			

COMPLETE SPLIT-PLOT Least square estimation AOV For W Weed AMACH smooth pigweed Aug-2-2022 BIOMASS /0.25m2 Aug-9-2022 21 20 21 DA-A (Data Column 16)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	135916.769766				
R	3	3179.811793	1059.937264	0.580	0.6334	
A	2	2864.492752	1432.246376	0.625	0.5670	29.2950
ERROR A	6	13760.076471	2293.346079			
B	3	22392.816839	7464.272280	4.082	0.0164	25.3280
AB	6	7786.337801	1297.722967	0.710	0.6447	43.8693
ERROR B	27	49369.984061	1828.517928			
C	1	77.796004	77.796004	0.094	0.7614	11.9348
AC	2	1498.711188	749.355594	0.902	0.4149	20.6717
BC	3	60.425131	20.141710	0.024	0.9948	23.8696
ABC	6	5005.847689	834.307948	1.004	0.4380	41.3434
ERROR C	36	29920.470038	831.124168			

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Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

COMPLETE SPLIT-PLOT Least square estimation AOV For W Weed GENERAL Aug-2-2022 BIOMASS /0.25m2 Aug-9-2022 21 20 21 DA-A (Data Column 17)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	31100.092650				
R	3	1477.893042	492.631014	2.311	0.0987	
A	2	2287.107938	1143.553969	2.849	0.1349	12.2560
ERROR A	6	2408.434772	401.405795			
B	3	11089.055834	3696.351945	17.339	0.0001	8.6482
AB	6	2375.137356	395.856226	1.857	0.1254	14.9791
ERROR B	27	5755.913695	213.181989			
C	1	923.769396	923.769396	8.798	0.0053	4.2419
AC	2	91.468980	45.734490	0.436	0.6502	7.3472
BC	3	285.504480	95.168160	0.906	0.4475	8.4838
ABC	6	626.097647	104.349608	0.994	0.4442	14.6944
ERROR C	36	3779.709509	104.991931			

COMPLETE SPLIT-PLOT Least square estimation AOV For C CITLA Watermelon Sep-7-2022 TOTAL COUNT no./2 r Sep-14-2022 57 56 57 DA-A (Data Column 19)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	6583.833333				
R	3	170.250000	56.750000	1.133	0.3535	
A	2	313.895833	156.947917	0.702	0.5323	9.1
ERROR A	6	1342.187500	223.697917			
B	3	1317.916667	439.305556	8.768	0.0003	4.2
AB	6	293.770833	48.961806	0.977	0.4596	7.3
ERROR B	27	1352.812500	50.104167			
C	1	287.041667	287.041667	10.678	0.0024	2.1
AC	2	249.395833	124.697917	4.639	0.0161	3.7
BC	3	28.875000	9.625000	0.358	0.7836	4.3
ABC	6	259.937500	43.322917	1.612	0.1723	7.4
ERROR C	36	967.750000	26.881944			

COMPLETE SPLIT-PLOT Least square estimation AOV For C CITLA Watermelon Sep-7-2022 Total Weigh LB Sep-14-2022 57 56 57 DA-A (Data Column 20)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	1226250.399333				
R	3	65465.274825	21821.758275	2.974	0.0493	
A	2	51000.940790	25500.470395	0.515	0.6218	136.155
ERROR A	6	297234.718994	49539.119832			
B	3	249101.332325	83033.777442	11.315	0.0001	50.740
AB	6	34629.046994	5771.507832	0.786	0.5882	87.884
ERROR B	27	198135.092706	7338.336767			
C	1	45141.230817	45141.230817	8.102	0.0073	30.901
AC	2	30392.083665	15196.041832	2.727	0.0789	53.522
BC	3	14289.299075	4763.099692	0.855	0.4733	61.802
ABC	6	40284.726119	6714.121020	1.205	0.3262	107.044
ERROR C	36	200576.653025	5571.573695			

COMPLETE SPLIT-PLOT Least square estimation AOV For C CITLA Watermelon Sep-7-2022 TTL AGV WT LB Sep-14-2022 57 56 57 DA-A (Data Column 21)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	264.035096				
R	3	40.366721	13.455574	12.048	0.0001	
A	2	19.436602	9.718301	0.854	0.4717	2.064
ERROR A	6	68.283848	11.380641			
B	3	29.962712	9.987571	8.943	0.0003	0.626
AB	6	10.504956	1.750826	1.568	0.1949	1.084
ERROR B	27	30.154756	1.116843			
C	1	2.082704	2.082704	1.421	0.2410	0.501
AC	2	2.432002	1.216001	0.830	0.4443	0.868
BC	3	3.272546	1.090849	0.744	0.5326	1.002
ABC	6	4.787873	0.797979	0.545	0.7707	1.736
ERROR C	36	52.750375	1.465288			

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

COMPLETE SPLIT-PLOT Least square estimation AOV For C CITLA Watermelon Sep-7-2022 MKT COUNT no./2 r Sep-14-2022 57 56 57 DA-A (Data Column 22)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	6039.906250				
R	3	367.531250	122.510417	3.897	0.0196	
A	2	338.687500	169.343750	0.635	0.5621	10.0
ERROR A	6	1599.812500	266.635417			
B	3	1130.614583	376.871528	11.988	0.0001	3.3
AB	6	248.979167	41.496528	1.320	0.2823	5.8
ERROR B	27	848.781250	31.436343			
C	1	231.260417	231.260417	9.249	0.0044	2.1
AC	2	170.770833	85.385417	3.415	0.0439	3.6
BC	3	55.114583	18.371528	0.735	0.5381	4.1
ABC	6	148.229167	24.704861	0.988	0.4479	7.2
ERROR C	36	900.125000	25.003472			

COMPLETE SPLIT-PLOT Least square estimation AOV For C CITLA Watermelon Sep-7-2022 TTL MKT WT no./2 r Sep-14-2022 57 56 57 DA-A (Data Column 23)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	1263003.716563				
R	3	95794.433646	31931.477882	4.879	0.0077	
A	2	49261.681875	24630.840938	0.446	0.6598	143.76
ERROR A	6	331380.602292	55230.100382			
B	3	226551.074479	75517.024826	11.539	0.0001	47.92
AB	6	39058.596458	6509.766076	0.995	0.4488	82.99
ERROR B	27	176701.212813	6544.489363			
C	1	35025.580104	35025.580104	5.760	0.0217	32.28
AC	2	30196.146458	15098.073229	2.483	0.0977	55.91
BC	3	27431.181146	9143.727049	1.504	0.2301	64.56
ABC	6	32706.188542	5451.031424	0.896	0.5080	111.83
ERROR C	36	218897.018750	6080.472743			

COMPLETE SPLIT-PLOT Least square estimation AOV For C CITLA Watermelon Sep-7-2022 AVG MK WT LB Sep-14-2022 57 56 57 DA-A (Data Column 24)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	154.985163				
R	3	11.828846	3.942949	3.379	0.0327	
A	2	9.971444	4.985722	0.701	0.5324	1.631
ERROR A	6	42.650248	7.108375			
B	3	14.510513	4.836838	4.145	0.0154	0.640
AB	6	2.248081	0.374680	0.321	0.9202	1.108
ERROR B	27	31.505531	1.166872			
C	1	2.419350	2.419350	2.511	0.1218	0.406
AC	2	0.237306	0.118653	0.123	0.8845	0.704
BC	3	2.522217	0.840739	0.873	0.4643	0.813
ABC	6	2.407502	0.401250	0.416	0.8632	1.408
ERROR C	36	34.684125	0.963448			

COMPLETE SPLIT-PLOT Least square estimation AOV For C CITLA Watermelon Sep-7-2022 ALL YIELD LB/A Sep-14-2022 57 56 57 DA-A (Data Column 25)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	25026472180.093300				
R	3	1336437801.469060	445479267.156352	2.975	0.0493	
A	2	1040683210.782750	520341605.391373	0.515	0.6219	19451.07
ERROR A	6	6066267680.204100	1011044613.367350			
B	3	5083886639.783360	1694628879.927790	11.316	0.0001	7248.49
AB	6	706645269.874573	117774211.645762	0.786	0.5882	12554.76
ERROR B	27	4043498110.229640	149759189.267765			
C	1	921542240.850372	921542240.850372	8.104	0.0072	4414.53
AC	2	620230896.220123	310115448.110062	2.727	0.0789	7646.19
BC	3	291605070.261108	97201690.087036	0.855	0.4733	8829.07
ABC	6	822060420.945679	137010070.157613	1.205	0.3262	15292.39
ERROR C	36	4093614839.472530	113711523.318682			

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

COMPLETE SPLIT-PLOT Least square estimation AOV For C CITLA Watermelon Sep-7-2022 ALL YIELD CWT/A Sep-14-2022 57 56 57 DA-A (Data Column 26)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	2502618.533333				
R	3	133635.568333	44545.189444	2.975	0.0493	
A	2	104051.681458	52025.840729	0.515	0.6219	194.50
ERROR A	6	606590.451042	101098.408507			
B	3	508412.010833	169470.670278	11.317	0.0001	72.48
AB	6	70674.173542	11779.028924	0.787	0.5881	125.54
ERROR B	27	404325.208125	14975.007708			
C	1	92169.220417	92169.220417	8.106	0.0072	44.14
AC	2	62026.102708	31013.051354	2.727	0.0789	76.46
BC	3	29187.488750	9729.162917	0.856	0.4729	88.29
ABC	6	82200.210625	13700.035104	1.205	0.3263	152.92
ERROR C	36	409346.417500	11370.733819			

COMPLETE SPLIT-PLOT Least square estimation AOV For C CITLA Watermelon Sep-7-2022 MKT YIELD LB/A Sep-14-2022 57 56 57 DA-A (Data Column 27)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	25776219869.055000				
R	3	1955319566.153640	651773188.717880	4.882	0.0077	
A	2	1005686521.473910	502843260.736954	0.446	0.6597	20537.62
ERROR A	6	6762928153.061230	1127154692.176870			
B	3	4623910375.137050	1541303458.379020	11.544	0.0001	6844.19
AB	6	797228945.579941	132871490.929990	0.995	0.4485	11854.49
ERROR B	27	3605011637.054170	133518949.520525			
C	1	715050945.863434	715050945.863434	5.762	0.0217	4611.82
AC	2	616127082.026794	308063541.013397	2.482	0.0977	7987.90
BC	3	560061913.888474	186687304.629491	1.504	0.2299	9223.63
ABC	6	667219335.247330	111203222.541222	0.896	0.5083	15975.80
ERROR C	36	4467675393.569020	124102094.265806			

COMPLETE SPLIT-PLOT Least square estimation AOV For C CITLA Watermelon Sep-7-2022 MKT YIELD CWT/A Sep-14-2022 57 56 57 DA-A (Data Column 28)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	2577673.118333				
R	3	195506.692500	65168.897500	4.881	0.0077	
A	2	100575.623333	50287.811667	0.446	0.6597	205.38
ERROR A	6	676305.857500	112717.642917			
B	3	462336.781667	154112.260556	11.542	0.0001	68.44
AB	6	79724.605833	13287.434306	0.995	0.4485	118.55
ERROR B	27	360526.627500	13352.838056			
C	1	71504.166667	71504.166667	5.761	0.0217	46.12
AC	2	61618.443333	30809.221667	2.482	0.0978	79.88
BC	3	56007.273333	18669.091111	1.504	0.2300	92.24
ABC	6	66734.869167	11122.478194	0.896	0.5083	159.77
ERROR C	36	446832.177500	12412.004931			

COMPLETE SPLIT-PLOT Least square estimation AOV For C CITLA Watermelon Sep-7-2022 All Yield 2 LB/A Sep-14-2022 57 56 57 DA-A (Data Column 30)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	1054403999.438300				
R	3	159682133.239166	53227377.746389	12.194	0.0001	
A	2	78402541.905830	39201270.952915	0.854	0.4717	4145.13
ERROR A	6	275493292.523338	45915548.753890			
B	3	121542959.269196	40514319.756399	9.282	0.0002	1237.50
AB	6	41571211.435799	6928535.239300	1.587	0.1892	2143.40
ERROR B	27	117855300.695129	4365011.136857			
C	1	8285512.593712	8285512.593712	1.419	0.2413	1000.24
AC	2	9717042.067451	4858521.033726	0.832	0.4433	1732.47
BC	3	13314905.978745	4438301.992915	0.760	0.5238	2000.48
ABC	6	18380179.072472	3063363.178745	0.525	0.7857	3464.94
ERROR C	36	210158920.657463	5837747.796041			

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Using Spring-Seeded Grass Cover Crops to Reduce Herbicide Inputs in Plasticulture Production

Trial ID: CPPM1-22 Cooperator Trial ID:
Protocol ID: CPPM1-22 Location: D-3,D-4 Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-NIFA
Investigator (Creator): Kurt Vollmer

COMPLETE SPLIT-PLOT Least square estimation AOV For C CITLA Watermelon Sep-7-2022 Mkt Yield 2 LB/A Sep-14-2022 57 56 57 DA-A (Data Column 31)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	95	617010779.294052				
R	3	46610193.307838	15536731.102613	3.347	0.0337	
A	2	40090568.318123	20045284.159061	0.711	0.5285	3248.99
ERROR A	6	169250642.806953	28208440.467826			
B	3	59082131.141190	19694043.713730	4.243	0.0140	1276.09
AB	6	8176265.943512	1362710.990585	0.294	0.9347	2210.24
ERROR B	27	125320305.861725	4641492.809694			
C	1	10016423.817505	10016423.817505	2.616	0.1145	810.09
AC	2	999285.346382	499642.673191	0.130	0.8781	1403.12
BC	3	9563391.002792	3187797.000931	0.833	0.4848	1620.19
ABC	6	10051032.181839	1675172.030307	0.437	0.8489	2806.25
ERROR C	36	137850539.566193	3829181.654616			

Pest Type
W, Weed = Weed or volunteer crop
Pest Code
AMACH, Amaranthus hybridus, smooth pigweed = US
ERICA, Erigeron canadensis, mare's-tail = US
VERPE, Veronica persica, Bird's-eye speedwell = US
Crop Type, Code
C = EPPO species (Bayer) codes
CITLA, BVVT, Citrullus lanatus, Watermelon = US
Rating Type
COUNT = count
CONTRO = control / burndown or knockdown
Rating Unit/Min/Max
g, , = gram
%, 0, 100 = percent
LB, , = pound

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Miscanthus management strategies when followed by spring tillage.

Trial ID: MISC1-22 Cooperator Trial ID:
Protocol ID: MISC1-22 Location: Ridgley, MD Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-ARS
Investigator: Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer

Status: E established
ARM Trial Created On: Apr-27-2022

Trial Location
City: Ridgely **Country:** USA United States
State/Prov.: Maryland

Latitude of LL Corner °: 38.9686522 N
Longitude of LL Corner °: -75.9178032 W

Regulations
Conducted Under GLP: No
Conducted Under GEP: No

Objectives:
Evaluate integrated tactics for terminating miscanthus in agronomic fields.

Role: INVEST investigator
Investigator: Kurt Vollmer
Role: SPONSR sponsor
Sponsor: USDA-ARS

Site and Design
Treated Plot Width: 8 FT
Treated Plot Length: 10 FT
Treated Plot Area: 80.0 FT2
Replications: 3 **Treatments:** 10 **Plots:** 30 **Study Design:** RACOBL Randomized Complete Block (RCB)

Application Description

	A	B	C
Date	May-18-2022	Jul-1-2022	
Start Time	10:00 AM	10:20 AM	
Stop Time	10:45 AM	10:53 AM	
Method	SPRAY	SPRAY	
Timing	POSPOS	POSPOS	
Placement	BROADC	BROADC	
Applied By	Vollmer, K.	Vollmer, K.	
Entry Date	May-18-2022	Jul-5-2022	
Air Temperature Start, Stop	66, 66 F	82, 86 -	
% Relative Humidity Start, Stop	45, 45	78, 67	
Wind Velocity+Dir. Start	5 MPH, SE	11 MPH, N	
Wind Velocity+Dir. Stop	5 MPH, SE	12 MPH, SSW	
Wind Velocity+Dir. Max	5 MPH, SE	12 MPH, SSW	
Wet Leaves (Y/N)	N, no	N, no	
Soil Moisture	SLIDRY	DRY	
% Cloud Cover	0	40	
First Moisture Occurred On	May-20-2022	Jun-2-2022	
Time to First Moisture	48.0 HR	24.0 HR	
Moisture 6 Hours after Appl.	0 IN	0 IN	
Moisture 24 Hours after Appl.	0 IN	0.19 IN	
Moisture 1 Week after Appl.	0.09 IN	0.25 IN	

Comment:
6/3/2022: glyphosate application to plots mowed on 5/18/2022, 9 AM - 9:30 AM, 73-77 F, 83% RH, NNW 9-10 mph.
7/14/2022: glyphosate application to plots mowed on 7/1/2022, 9:30 AM - 9:46 AM, 80-81 F, 73% to 69% RH, SE 5 mph to 6 mph, 0% CC, soil dry.
2/6/2023: miscanthus harvested = fall mow

University of Maryland

Miscanthus management strategies when followed by spring tillage.

Trial ID: MISC1-22 Cooperator Trial ID:
Protocol ID: MISC1-22 Location: Ridgley, MD Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-ARS
Investigator: Kurt Vollmer

Application Equipment

	A	B	C
Operation Pressure	22 PSI	14 PSI	
Nozzle Type	FLAFAN	FLAFAN	
Nozzle Tip Size, Color	8003, Blue	8003, Blue	
Nozzle Spacing	20 IN	20 IN	
Nozzles/Row	6.0	6.0	
Boom Length	10.0 FT	10.0 FT	
Boom Height	12.0 IN	12.0 IN	
Ground Speed	3 MPH	3 MPH	
Carrier	WATER	WATER	
Application Amount	18 GAL/AC	15 GAL/AC	
Propellant	COMCO2	COMCO2	

Notes

Context	Date	By	Notes
STATUS	Apr-27-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-18-2022	Kurt Vollmer	Automatically added by ARM: Trial Status changed to: E: changed by (EMDVOK).
STATUS	May-18-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

University of Maryland

Miscanthus management strategies when followed by spring tillage.

Trial ID: MISC1-22 Cooperator Trial ID:
Protocol ID: MISC1-22 Location: Ridgley, MD Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-ARS
Investigator: Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	4*	5*	7*
Rating Date					Jun-24-2022	Jun-24-2022	Aug-5-2022	Aug-5-2022	Dec-13-2022
Rating Type					PHYST	PHYNEC	PHYST	PHYNEC	PHYST
Rating Unit/Min/Max					%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Crop Type, Code					C, MISSS	C, MISSS	C, MISSS	C, MISSS	C, MISSS
Crop Name					Miscanthus sp.	Miscanthus sp.	Miscanthus sp.	Miscanthus sp.	Miscanthus sp.
Days After First/Last Applic.					37, 37	37, 37	79, 35	79, 35	209, 165
Data Entry Date					Jul-5-2022	Jul-5-2022	Aug-5-2022	Aug-5-2022	Dec-14-2022
1	unteated/disk only				0.0 b	0.0 b	0.0 c	0.0 c	0.0 c
2	mowing (spring)			A	3.3 b	0.0 b	35.0 bc	0.0 c	16.7 c
3	mowing (spring)			A	5.0 b	0.0 b	38.3 bc	0.0 c	25.0 bc
	mowing (summer)			B					
4	mowing (spring)			A	3.3 b	0.0 b	55.0 ab	0.0 c	40.2 bc
	mowing (summer)			B					
	mowing (fall)			C					
5	Roundup PowerMax (spring)	1.13	lb ae/a	A	1.7 b	0.0 b	20.0 bc	25.0 b	26.7 bc
	ammonium sulfate	8.8	lb/100 gal	A					
6	Roundup PowerMax (spring)	1.13	lb ae/a	A	0.0 b	0.0 b	16.7 bc	82.3 a	46.7 bc
	ammonium sulfate	8.8	lb/100 gal	A					
	Roundup PowerMax (summer)	1.13	lb ae/a	B					
	ammonium sulfate	8.8	lb/100 gal	B					
8	mowing (spring)			A	50.0 a	48.3 a	82.3 a	73.3 a	70.0 ab
	Roundup PowerMax (spring)	1.13	lb ae/a	A					
	ammonium sulfate	8.8	lb/100 gal	A					
9	mowing (spring)			A	50.0 a	43.3 a	91.7 a	81.7 a	88.3 a
	Roundup PowerMax (spring)	1.13	lb ae/a	A					
	ammonium sulfate	8.8	lb/100 gal	A					
	mowing (summer)			B					
	Roundup PowerMax (summer)	1.13	lb ae/a	B					
	ammonium sulfate	8.8	lb/100 gal	B					
10	mowing (spring)			A	50.0 a	43.3 a	90.0 a	78.3 a	93.3 a
	Roundup PowerMax (spring)	1.13	lb ae/a	A					
	ammonium sulfate	8.8	lb/100 gal	A					
	mowing (summer)			B					
	Roundup PowerMax (summer)	1.13	lb ae/a	B					
	ammonium sulfate	8.8	lb/100 gal	B					
	mowing (fall)			C					
LSD P=.05					4.86	9.12	32.62	12.50	30.41
Standard Deviation					2.81	5.27	18.85	7.22	17.48
CV					15.46	35.14	39.54	19.08	38.51
Grand Mean					18.15	15.00	47.67	37.85	45.38
Levene's F^					0.647	0.409	0.759	1.28	0.549
Levene's Prob(F)					0.729	0.90	0.642	0.313	0.804
Rank X2					.	.	.	.	.
P(Rank X2)					.	.	.	.	.
Shapiro-Wilk^					0.9211*	0.8652*	0.9332	0.9189*	0.9801
P(Shapiro-Wilk)^					0.0419*	0.0023*	0.0826	0.0372*	0.8756
Skewness^					0.7431	-0.9796*	-0.656	0.0758	-0.3572
P(Skewness)^					0.1278	0.0481*	0.1766	0.8738	0.465
Kurtosis^					1.192	1.4589	1.6267	2.2373*	0.405
P(Kurtosis)^					0.2064	0.1248	0.0887	0.0222*	0.6692
Replicate F					1.529	1.900	0.070	0.940	1.313
Replicate Prob(F)					0.2467	0.1818	0.9329	0.4111	0.2982
Treatment F					218.500	54.900	9.744	91.246	10.339
Treatment Prob(F)					0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 7=2.8
* Adjusted means
^Calculated from residual.

University of Maryland

Miscanthus management strategies when followed by spring tillage.

Trial ID: MISC1-22 Cooperator Trial ID:
Protocol ID: MISC1-22 Location: Ridgley, MD Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-ARS
Investigator: Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	9*	10*
Rating Date					May-4-2023	May-4-2023
Rating Type					DENSIT	WEIDRY
Rating Unit/Min/Max					/0.25m2, -, -	g, -, -
Crop Type, Code					C, MISSS	
Crop Name					Miscanthus sp.	
Days After First/Last Applic.					351, 307	351, 307
Data Entry Date					May-5-2023	May-24-2023
1	unteated/disk only				28.3 a	20.93 -
2	mowing (spring)			A	28.3 a	30.40 -
3	mowing (spring)			A	22.3 a	29.43 -
	mowing (summer)			B		
4	mowing (spring)			A	34.3 a	33.63 -
	mowing (summer)			B		
	mowing (fall)			C		
5	Roundup PowerMax (spring)	1.13	lb ae/a	A	34.7 a	34.50 -
	ammonium sulfate	8.8	lb/100 gal	A		
6	Roundup PowerMax (spring)	1.13	lb ae/a	A	8.0 b	7.67 -
	ammonium sulfate	8.8	lb/100 gal	A		
	Roundup PowerMax (summer)	1.13	lb ae/a	B		
	ammonium sulfate	8.8	lb/100 gal	B		
8	mowing (spring)			A	5.3 b	5.03 -
	Roundup PowerMax (spring)	1.13	lb ae/a	A		
	ammonium sulfate	8.8	lb/100 gal	A		
9	mowing (spring)			A	0.3 b	5.60 -
	Roundup PowerMax (spring)	1.13	lb ae/a	A		
	ammonium sulfate	8.8	lb/100 gal	A		
	mowing (summer)			B		
	Roundup PowerMax (summer)	1.13	lb ae/a	B		
	ammonium sulfate	8.8	lb/100 gal	B		
10	mowing (spring)			A	1.7 b	0.37 -
	Roundup PowerMax (spring)	1.13	lb ae/a	A		
	ammonium sulfate	8.8	lb/100 gal	A		
	mowing (summer)			B		
	Roundup PowerMax (summer)	1.13	lb ae/a	B		
	ammonium sulfate	8.8	lb/100 gal	B		
	mowing (fall)			C		
LSD P=.05					10.55	21.001
Standard Deviation					6.09	12.133
CV					33.58	65.17
Grand Mean					18.15	18.619
Levene's F^					0.362	0.501
Levene's Prob(F)					0.928	0.84
Rank X2					.	.
P(Rank X2)					.	.
Shapiro-Wilk^					0.9758	0.9588
P(Shapiro-Wilk)^					0.7577	0.3461
Skewness^					0.2082	0.4684
P(Skewness)^					0.663	0.3306
Kurtosis^					-0.6581	-0.1627
P(Kurtosis)^					0.4807	0.861
Replicate F					1.389	0.278
Replicate Prob(F)					0.2777	0.7609
Treatment F					16.319	3.938
Treatment Prob(F)					0.0001	0.0095

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 7=2.8
* Adjusted means
^Calculated from residual.

University of Maryland

Miscanthus management strategies when followed by spring tillage.

Trial ID: MISC1-22 Cooperator Trial ID:
Protocol ID: MISC1-22 Location: Ridgley, MD Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-ARS
Investigator: Kurt Vollmer

Rating Type
PHYNEC = phytotoxicity - necrosis /burn
DENSIT = density
WEIDRY = weight - dry / dry matter content
Rating Unit/Min/Max
%, 0, 100 = percent
g, , = gram
Crop Type, Code
C = EPPO species (Bayer) codes
MISSS, BGRM, Miscanthus sp., Miscanthus sp. = US

University of Maryland

Miscanthus Management in Agronomic Fields

Trial ID: MISC3-22 Cooperator Trial ID:
Protocol ID: MISC3-21 Location: Ridgley, MD Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-ARS
Investigator: Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: Apr-20-2022

Trial Location
City: Ridgely **Country:** USA United States
State/Prov.: Maryland

Latitude of LL Corner °: 38.968916 N
Longitude of LL Corner °: -75.9175481 W

Regulations
Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
Role: SPONSR sponsor
Sponsor: USDA-ARS

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2
Replications: 4 **Treatments:** 10 **Plots:** 40 **Study Design:** RACOBL Randomized Complete Block (RCB)

Application Description

	A	B	C
Date	May-18-2022	Jul-1-2022	
Start Time	10:00 AM	10:20 AM	
Stop Time	10:45 AM	10:53 AM	
Method	SPRAY	SPRAY	
Timing	POSPOS	POSPOS	
Placement	BROADC	BROADC	
Applied By	Vollmer, K.	Vollmer, K.	
Entry Date	May-18-2022	Jul-5-2022	
Air Temperature Start, Stop	66, 66 F	82, 86 -	
% Relative Humidity Start, Stop	45, 45	78, 67	
Wind Velocity+Dir. Start	5 MPH, SE	11 MPH, N	
Wind Velocity+Dir. Stop	5 MPH, SE	12 MPH, SSW	
Wind Velocity+Dir. Max	5 MPH, SE	12 MPH, SSW	
Wet Leaves (Y/N)	N, no	N, no	
Soil Moisture	SLIDRY	DRY	
% Cloud Cover	0	40	

Comment:
6/3/2022: mowing follwed by glyphosate application, 9 AM - 9:30 AM, 73-77 F, 83% RH, NNW 9-10 mph.
7/14/2022: mowing followed by glyphosate application, 9:30 AM - 9:46 AM, 80-81 F, 73% to 69% RH, SE 5 mph to 6 mph, 0% CC, soil dry. 2/6/2022: miscanthus harvested = fall mow

Application Equipment

	A	B	C
Operation Pressure	14 PSI	14 PSI	
Nozzle Type	FLAFAN	FLAFAN	
Nozzle Tip Size, Color	8003, Blue	8003, Blue	
Nozzle Spacing	20 IN	20 IN	
Nozzles/Row	6.0	6.0	
Boom Length	10.0 FT	10.0 FT	
Boom Height	12.0 IN	12.0 IN	
Ground Speed	3 MPH	3 MPH	
Carrier	WATER	WATER	
Water Hardness (ppm CaCO3)		15	
Application Amount	18 GAL/AC	18 GAL/AC	
Propellant	COMCO2	COMCO2	

University of Maryland

Miscanthus Management in Agronomic Fields

Trial ID: MISC3-22 Cooperator Trial ID:
Protocol ID: MISC3-21 Location: Ridgley, MD Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-ARS
Investigator: Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	4*	5*	7*	9*
	Rating Date				Jun-24-2022	Jun-24-2022	Aug-5-2022	Aug-5-2022	Dec-13-2022	May-4-2023
	Rating Type				REDUCT	PHYNEC	PHYST	PHYNEC	PHYST	DENSIT
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	/0.25m2, -, -
	Crop Type, Code									C, MISSS
	Crop Name									Miscanthus sp.
	Days After First/Last Applic.				37, 37	37, 37	79, 35	79, 35	209, 165	351, 307
	Data Entry Date				Jul-5-2022	Jul-5-2022	Aug-5-2022	Aug-5-2022	Dec-14-2022	May-5-2023
1	no herbicide			A	0.0 b	0.0 -	0.0 d	0.0 c	0.0 b	25.3 a-d
2	Roundup PowerMax (spring)	1.13	lb ae/a	A	65.0 a	8.8 -	15.0 d	10.0 c	15.0 b	36.3 a
	ammonium sulfate	8.8	lb/100 gal	A						
3	Roundup PowerMax (spring)	1.13	lb ae/a	A	53.8 a	6.3 -	71.3 b	51.3 a	57.4 a	13.5 d
	ammonium sulfate	8.8	lb/100 gal	A						
	Roundup PowerMax (summer)	1.13	lb ae/a	B						
	ammonium sulfate	8.8	lb/100 gal	B						
5	mow (spring)			A	0.0 b	0.0 -	0.0 d	0.0 c	0.0 b	26.8 a-d
6	mow (spring)			A	5.0 b	0.0 -	72.5 b	0.0 c		29.0 abc
	mow (summer)			B						
	mow (fall)			C						
7	mow (fall)			A	5.0 b	0.0 -	0.0 d	0.0 c	0.0 b	26.3 a-d
	mow (spring)			C						
8	mow (spring)			A	45.0 a	13.8 -	50.0 c	20.0 b	46.3 a	18.5 cd
	Roundup PowerMax (spring)	1.13	lb ae/a	A						
	ammonium sulfate	8.8	lb/100 gal	A						
9	mow (spring)			A	43.8 a	2.5 -	90.8 a	2.5 c	69.1 a	34.3 ab
	Roundup PowerMax (spring)	1.13	lb ae/a	A						
	ammonium sulfate	8.8	lb/100 gal	A						
	mow (summer)			B						
	Roundup PowerMax (summer)	1.13	lb ae/a	B						
	ammonium sulfate	8.8	lb/100 gal	B						
	mow (fall)			C						
10	mow (fall)			C	0.0 b	0.0 -			2.1 b	19.8 bcd
	LSD P=.05				19.08	10.72	13.04	9.58	16.18	9.83
	Standard Deviation				13.07	7.35	8.87	6.52	10.67	6.73
	CV				54.09	211.62	23.69	62.23	43.01	26.41
	Grand Mean				24.17	3.47	37.44	10.47	24.80	25.50
	Levene's F^				0.47	1.616	5.622*	9.672*	1.785	0.531
	Levene's Prob(F)				0.867	0.167	0.001*	0.00*	0.156	0.823
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				0.9452	0.7075*	0.9509	0.9083*	0.9132*	0.9797
	P(Shapiro-Wilk)^				0.0736	0.0*	0.153	0.0101*	0.0359*	0.7344
	Skewness^				-0.3058	2.4448*	-0.1973	-0.0173	0.669	-0.0216
	P(Skewness)^				0.4593	0.0*	0.6523	0.9684	0.1857	0.9582
	Kurtosis^				0.9137	13.2443*	1.3712	1.8448*	3.1031*	-0.671
	P(Kurtosis)^				0.261	0.0*	0.1155	0.0371*	0.0034*	0.4071
	Replicate F				4.362	0.836	0.705	0.411	0.467	10.119
	Replicate Prob(F)				0.0138	0.4874	0.5597	0.7467	0.7102	0.0002
	Treatment F				17.107	1.875	73.221	30.371	22.252	4.771
	Treatment Prob(F)				0.0001	0.1118	0.0001	0.0001	0.0001	0.0013

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 7=2.5
* Adjusted means
^Calculated from residual.

University of Maryland

Miscanthus Management in Agronomic Fields

Trial ID: MISC3-22 Cooperator Trial ID:
Protocol ID: MISC3-21 Location: Ridgley, MD Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-ARS
Investigator: Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	10*
	Rating Date				May-4-2023
	Rating Type				Dry Weight
	Rating Unit/Min/Max				g, -, -
	Crop Type, Code				C, MISSS
	Crop Name				Miscanthus sp.
	Days After First/Last Applic.				351, 307
	Data Entry Date				May-24-2023
1	no herbicide			A	32.53 ab
2	Roundup PowerMax (spring)	1.13	lb ae/a	A	29.73 ab
	ammonium sulfate	8.8	lb/100 gal	A	
3	Roundup PowerMax (spring)	1.13	lb ae/a	A	10.25 b
	ammonium sulfate	8.8	lb/100 gal	A	
	Roundup PowerMax (summer)	1.13	lb ae/a	B	
	ammonium sulfate	8.8	lb/100 gal	B	
5	mow (spring)			A	28.15 ab
6	mow (spring)			A	20.45 ab
	mow (summer)			B	
	mow (fall)			C	
7	mow (fall)			A	33.83 ab
	mow (spring)			C	
8	mow (spring)			A	15.68 b
	Roundup PowerMax (spring)	1.13	lb ae/a	A	
	ammonium sulfate	8.8	lb/100 gal	A	
9	mow (spring)			A	42.03 a
	Roundup PowerMax (spring)	1.13	lb ae/a	A	
	ammonium sulfate	8.8	lb/100 gal	A	
	mow (summer)			B	
	Roundup PowerMax (summer)	1.13	lb ae/a	B	
	ammonium sulfate	8.8	lb/100 gal	B	
	mow (fall)			C	
10	mow (fall)			C	22.68 ab
	LSD P=.05				15.525
	Standard Deviation				10.638
	CV				40.69
	Grand Mean				26.144
	Levene's F^				1.207
	Levene's Prob(F)				0.332
	Rank X2				.
	P(Rank X2)				.
	Shapiro-Wilk^				0.9842
	P(Shapiro-Wilk)^				0.8749
	Skewness^				0.3371
	P(Skewness)^				0.4151
	Kurtosis^				0.3053
	P(Kurtosis)^				0.7049
	Replicate F				9.910
	Replicate Prob(F)				0.0002
	Treatment F				3.426
	Treatment Prob(F)				0.0091

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 7=2.5
* Adjusted means
^Calculated from residual.

University of Maryland

Miscanthus Management in Agronomic Fields

Trial ID: MISC3-22 Cooperator Trial ID:
Protocol ID: MISC3-21 Location: Ridgley, MD Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: USDA-ARS
Investigator: Kurt Vollmer

Rating Type
REDUCT = reduction
PHYNEC = phytotoxicity - necrosis /burn
DENSIT = density
Rating Unit/Min/Max
%, 0, 100 = percent
g, , = gram
Crop Type, Code
C = EPPO species (Bayer) codes
MISSS, BGRM, Miscanthus sp., Miscanthus sp. = US

University of Maryland

Options for controlling Italian ryegrass prior to soybean planting

Trial ID: MSB1-22 Cooperator Trial ID:
Protocol ID: MSB1-22 Location: Royal Oak, MD Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Maryland Soybean Board
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: Sep-23-2021
Initiation Date: Dec-1-2021
Completion Date: May-9-2022

Trial Location
Country: USA United States
State/Prov.: Maryland **County:** Talbot

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
Organization: University of Maryland
Address 1: 124 Wye Narrows Drive
Country: USA United States **E-mail:** kvollmer@umd.edu
City: Queenstown **State/Prov:** MD **Postal Code:** 21658
Role: SPONSR sponsor
Sponsor: Maryland Soybean Board

Pest Description
Pest 1 Type: W **Code:** LOLMG Lolium multiflorum gaudini **Entry Date:** Mar-23-2022
Common Name: Annual ryegrass **Stage Scale:** BBCH
Artificial Population: N no

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2
Replications: 4 **Treatments:** 12 **Plots:** 48 **Study Design:** FACTOR Factorial (RCB)

Soil Description
Texture: SIL silt loam
Soil Name: Crosidadore silt loam

Application Description

	A	B
Application Date	Dec-1-2021	Mar-18-2022
Appl. Start Time	2:30 PM	2:30 PM
Appl. Stop Time	3:00 PM	3:00 PM
Application Method	SPRAY	SPRAY
Application Timing	PREPRE	POSTWE
Application Placement	BROSOI	BROFOL
Applied By	Vollmer, K.	Vollmer, K.
Appl. Entry Date	Dec-7-2021	Mar-23-2022
Air Temperature Start, Stop	52, 52 F	68, 68 F
% Relative Humidity Start, Stop	48, 48	63, 63
Wind Velocity+Dir. Start	7 MPH, S	8 MPH, S
Wind Velocity+Dir. Stop	7 MPH, S	8 MPH, S
Wind Velocity+Dir. Max	7 MPH, S	8 MPH, S
Wet Leaves (Y/N)	N, no	N, no
Soil Moisture	SLIWET	WET
% Cloud Cover	40	40
Next Moisture Occurred On	Dec-1-2021	Mar-18-2022
Time to Next Moisture	0.0 HR	0.0 HR
Moisture 1 Week after Appl.	0.04 IN	0.75 IN
Problems with Application?	N, no	N, no

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	LOLMG, W, BBCH	LOLMG, W, BBCH
Height Average		6.75 IN
Height Minimum, Maximum		5.5, 8

Application Equipment

	A	B
Nozzle Tip Size, Color	-, Yellow	-, Yellow
Nozzle Spacing	18.0 -	18.0 -

University of Maryland

Options for controlling Italian ryegrass prior to soybean planting

Trial ID: MSB1-22 Cooperator Trial ID:
Protocol ID: MSB1-22 Location: Royal Oak, MD Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Maryland Soybean Board
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code	LOLMG	LOLMG	LOLMG	LOLMG
Pest Name	Annual ryegrass	Annual ryegrass	Annual ryegrass	Annual ryegrass
Rating Date	Dec-14-2021	Dec-14-2021	Mar-16-2022	Mar-31-2022
Rating Type	CONTRO	No/0.25m2	CONTRO	CONTRO
Rating Unit/Min/Max	%, 0, 100		%, 0, 100	
Data Entry Date	Dec-16-2021	Dec-16-2021	Mar-17-2022	Apr-5-2022
Days After First/Last Applic.	13, 13	13, 13	105, 105	120, 13
Trt-Eval Interval	13 DA-A	13 DA-A	105 DA-A	
Level Description	1	2	3	4
TABLE OF R MEANS				
Replicate 1	54.3	1.8	58.3	66.2
Replicate 2	36.2	1.1	63.8	85.2
Replicate 3	65.1	0.4	64.6	87.0
Replicate 4	87.5	0.1	57.3	59.0
TABLE OF A (Appllcaiton Timing) MEANS				
1 Fall	85.0 a	0.5 b	92.4 a	78.6 a
2 Spring	.	.	0.0 b	55.4 b
3 Sequential	36.5 b	1.2 a	90.5 a	88.9 a
LSD P=.05	25.15	0.61	5.53	19.60
Standard Deviation	33.99	0.82	7.69	27.25
CV	55.92	97.85	12.62	36.66
TABLE OF B (Herbicides) MEANS				
1 Roundup PowerMax;ammonium sulfate	44.7 -	1.0 -	56.5 b	57.8 c
2 Roundup PowerMax;Valor SX;ammonium sulfate	64.6 -	0.8 -	60.8 ab	66.3 bc
3 Roundup PowerMax;Sharpen;ammonium sulfate;methylated seed oil	66.1 -	0.8 -	60.0 b	82.0 ab
4 Roundup PowerMax;Select Max;nonionic surfactant;ammonium sulfate	67.7 -	0.9 -	66.5 a	91.3 a
LSD P=.05	29.04	0.70	6.39	22.63
Standard Deviation	33.99	0.82	7.69	27.25
CV	55.92	97.85	12.62	36.66
TABLE OF A (Appllcaiton Timing) B (Herbicides) MEANS				
1 Fall 1 Roundup PowerMax;ammonium sulfate	89.1 -	0.4 -	89.0 -	64.5 -
2 Spring 1 Roundup PowerMax;ammonium sulfate	.	.	0.0 -	25.0 -
3 Sequential 1 Roundup PowerMax;ammonium sulfate	0.3 -	1.5 -	80.5 -	83.8 -
1 Fall 2 Roundup PowerMax;Valor SX;ammonium sulfate	76.3 -	0.8 -	90.5 -	76.8 -
2 Spring 2 Roundup PowerMax;Valor SX;ammonium sulfate	.	.	0.0 -	46.3 -
3 Sequential 2 Roundup PowerMax;Valor SX;ammonium sulfate	53.0 -	0.8 -	92.0 -	76.0 -
1 Fall 3 Roundup PowerMax;Sharpen;ammonium sulfate;methylated seed oil	77.3 -	0.3 -	90.0 -	73.8 -
2 Spring 3 Roundup PowerMax;Sharpen;ammonium sulfate;methylated seed oil	.	.	0.0 -	76.3 -
3 Sequential 3 Roundup PowerMax;Sharpen;ammonium sulfate;methylated seed oil	55.0 -	1.3 -	90.0 -	96.0 -
1 Fall 4 Roundup PowerMax;Select Max;nonionic surfactant;ammonium sulfate	97.5 -	0.5 -	100.0 -	99.5 -
2 Spring 4 Roundup PowerMax;Select Max;nonionic surfactant;ammonium sulfate	.	.	0.0 -	74.3 -
3 Sequential 4 Roundup PowerMax;Select Max;nonionic surfactant;ammonium sulfate	37.8 -	1.3 -	99.5 -	100.0 -
LSD P=.05	50.30	1.22	11.07	39.20
Standard Deviation	33.99	0.82	7.69	27.25
CV	55.92	97.85	12.62	36.66

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Options for controlling Italian ryegrass prior to soybean planting

Trial ID: MSB1-22 Cooperator Trial ID:
Protocol ID: MSB1-22 Location: Royal Oak, MD Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Maryland Soybean Board
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code	LOLMG	LOLMG	LOLMG	LOLMG
Pest Name	Annual ryegrass	Annual ryegrass	Annual ryegrass	Annual ryegrass
Rating Date	Mar-31-2022	Apr-19-2022	Apr-19-2022	May-9-2022
Rating Type	No/0.25m2	CONTRO	No/0.25m2	CONTRO
Rating Unit/Min/Max		%, 0, 100		%, 0, 100
Data Entry Date	Apr-5-2022	Apr-20-2022	Apr-20-2022	May-10-2022
Days After First/Last Applic.	120, 13	139, 32	139, 32	159, 52
Trt-Eval Interval				
Level Description	5	6	7	8
TABLE OF R MEANS				
Replicate 1	1.5	59.3	2.2	51.3
Replicate 2	1.8	60.7	2.8	57.3
Replicate 3	1.3	65.7	2.8	63.8
Replicate 4	3.4	49.8	3.8	58.6
TABLE OF A (Appllcaiton Timing) MEANS				
1 Fall	2.2 a	56.6 b	3.3 a	44.4 b
2 Spring	3.1 a	38.1 c	4.1 a	47.8 b
3 Sequential	0.6 b	81.9 a	1.4 b	81.0 a
LSD P=.05	1.37	15.47	1.16	18.13
Standard Deviation	1.90	21.50	1.61	25.20
CV	96.66	36.52	55.29	43.66
TABLE OF B (Herbicides) MEANS				
1 Roundup PowerMax;ammonium sulfate	2.6 a	29.8 c	4.0 a	37.1 b
2 Roundup PowerMax;Valor SX;ammonium sulfate	2.6 a	60.0 b	3.4 a	57.6 b
3 Roundup PowerMax;Sharpen;ammonium sulfate;methylated seed oil	2.0 ab	48.6 b	3.8 a	49.0 b
4 Roundup PowerMax;Select Max;nonionic surfactant;ammonium sulfate	0.6 b	97.2 a	0.5 b	87.3 a
LSD P=.05	1.58	17.86	1.33	20.93
Standard Deviation	1.90	21.50	1.61	25.20
CV	96.66	36.52	55.29	43.66
TABLE OF A (Appllcaiton Timing) B (Herbicides) MEANS				
1 Fall 1 Roundup PowerMax;ammonium sulfate	2.3 -	29.3 -	3.8 -	28.8 -
2 Spring 1 Roundup PowerMax;ammonium sulfate	4.1 -	11.3 -	5.4 -	25.0 -
3 Sequential 1 Roundup PowerMax;ammonium sulfate	1.4 -	48.8 -	2.9 -	57.5 -
1 Fall 2 Roundup PowerMax;Valor SX;ammonium sulfate	3.0 -	62.5 -	3.8 -	57.0 -
2 Spring 2 Roundup PowerMax;Valor SX;ammonium sulfate	4.5 -	28.0 -	5.6 -	26.3 -
3 Sequential 2 Roundup PowerMax;Valor SX;ammonium sulfate	0.4 -	89.5 -	0.8 -	89.5 -
1 Fall 3 Roundup PowerMax;Sharpen;ammonium sulfate;methylated seed oil	3.3 -	40.0 -	4.5 -	13.8 -
2 Spring 3 Roundup PowerMax;Sharpen;ammonium sulfate;methylated seed oil	2.1 -	16.3 -	4.9 -	49.3 -
3 Sequential 3 Roundup PowerMax;Sharpen;ammonium sulfate;methylated seed oil	0.8 -	89.5 -	2.0 -	84.0 -
1 Fall 4 Roundup PowerMax;Select Max;nonionic surfactant;ammonium sulfate	0.1 -	94.5 -	1.0 -	78.0 -
2 Spring 4 Roundup PowerMax;Select Max;nonionic surfactant;ammonium sulfate	1.8 -	97.0 -	0.4 -	90.8 -
3 Sequential 4 Roundup PowerMax;Select Max;nonionic surfactant;ammonium sulfate	0.0 -	100.0 -	0.0 -	93.0 -
LSD P=.05	2.74	30.93	2.31	36.26
Standard Deviation	1.90	21.50	1.61	25.20
CV	96.66	36.52	55.29	43.66

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Options for controlling Italian ryegrass prior to soybean planting

Trial ID: MSB1-22 Cooperator Trial ID:
Protocol ID: MSB1-22 Location: Royal Oak, MD Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Maryland Soybean Board
Investigator (Creator): Kurt Vollmer

Pest Type	W, Weed
Pest Code	LOLMG
Pest Name	Annual ryegrass
Rating Date	May-9-2022
Rating Type	Height
Rating Unit/Min/Max	IN, -, -
Data Entry Date	May-10-2022
Days After First/Last Applic. Trt-Eval Interval	159, 52
Level Description	9
TABLE OF R MEANS Replicate 1	9.6
Replicate 2	7.6
Replicate 3	7.8
Replicate 4	8.0
TABLE OF A (Appllcaiton Timing) MEANS 1 Fall	8.4 a
2 Spring	10.0 a
3 Sequential	6.4 b
LSD P=.05	1.71
Standard Deviation	2.38
CV	28.72
TABLE OF B (Herbicides) MEANS 1 Roundup PowerMax;ammonium sulfate	10.1 a
2 Roundup PowerMax;Valor SX;ammonium sulfate	9.1 a
3 Roundup PowerMax;Sharpen;ammonium sulfate;methylated seed oil	9.1 a
4 Roundup PowerMax;Select Max;nonionic surfactant;ammonium sulfate	4.8 b
LSD P=.05	1.98
Standard Deviation	2.38
CV	28.72
TABLE OF A (Appllcaiton Timing) B (Herbicides) MEANS 1 Fall 1 Roundup PowerMax;ammonium sulfate	10.8 -
2 Spring 1 Roundup PowerMax;ammonium sulfate	12.0 -
3 Sequential 1 Roundup PowerMax;ammonium sulfate	7.5 -
1 Fall 2 Roundup PowerMax;Valor SX;ammonium sulfate	9.4 -
2 Spring 2 Roundup PowerMax;Valor SX;ammonium sulfate	11.5 -
3 Sequential 2 Roundup PowerMax;Valor SX;ammonium sulfate	6.5 -
1 Fall 3 Roundup PowerMax;Sharpen;ammonium sulfate;methylated seed oil	8.8 -
2 Spring 3 Roundup PowerMax;Sharpen;ammonium sulfate;methylated seed oil	10.6 -
3 Sequential 3 Roundup PowerMax;Sharpen;ammonium sulfate;methylated seed oil	8.0 -
1 Fall 4 Roundup PowerMax;Select Max;nonionic surfactant;ammonium sulfate	4.9 -
2 Spring 4 Roundup PowerMax;Select Max;nonionic surfactant;ammonium sulfate	5.8 -
3 Sequential 4 Roundup PowerMax;Select Max;nonionic surfactant;ammonium sulfate	3.8 -
LSD P=.05	3.42
Standard Deviation	2.38
CV	28.72

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Options for controlling Italian ryegrass prior to soybean planting

Trial ID: MSB1-22 Cooperator Trial ID:
Protocol ID: MSB1-22 Location: Royal Oak, MD Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Maryland Soybean Board
Investigator (Creator): Kurt Vollmer

FACTORIAL/POOLED ERROR Least square estimation AOV For W Weed LOLMG Annual ryegrass Dec-14-2021 CONTRO % 0 100 Dec-16-2021 13 13 13 DA-A (Data Column 1) Analysis will skip factor level A2 for column 1 - all A2 treatments are missing

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	29	62124.966667				
R	3	11653.520238	3884.506746	3.363	0.0403	
A	1	17328.660027	17328.660027	15.002	0.0010	25.1
B	3	3389.064373	1129.688124	0.978	0.4239	29.0
AB	3	7807.264583	2602.421528	2.253	0.1152	50.3
ERROR	19	21946.457445	1155.076708			

FACTORIAL/POOLED ERROR Least square estimation AOV For W Weed LOLMG Annual ryegrass Dec-14-2021 No/0.25m2 Dec-16-2021 13 13 13 DA-A (Data Column 2) Analysis will skip factor level A2 for column 2 - all A2 treatments are missing

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	29	30.800000				
R	3	11.764286	3.921429	5.792	0.0055	
A	1	3.760989	3.760989	5.555	0.0293	0.6
B	3	0.302697	0.100899	0.149	0.9290	0.7
AB	3	2.108333	0.702778	1.038	0.3983	1.2
ERROR	19	12.863695	0.677037			

FACTORIAL/POOLED ERROR Least square estimation AOV For W Weed LOLMG Annual ryegrass Mar-16-2022 CONTRO % 0 100 Mar-17-2022 105 105 105 DA-A (Data Column 3)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	92715.916667				
R	3	504.250000	168.083333	2.840	0.0528	
A	2	89210.166667	44605.083333	753.792	0.0001	5.5
B	3	618.250000	206.083333	3.483	0.0266	6.4
AB	6	430.500000	71.750000	1.213	0.3247	11.1
ERROR	33	1952.750000	59.174242			

FACTORIAL/POOLED ERROR Least square estimation AOV For W Weed LOLMG Annual ryegrass Mar-31-2022 CONTRO Apr-5-2022 120 13 (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	52188.666667				
R	3	6955.333333	2318.444444	3.122	0.0390	
A	2	9420.041667	4710.020833	6.343	0.0047	19.6
B	3	8207.500000	2735.833333	3.684	0.0216	22.6
AB	6	3100.625000	516.770833	0.696	0.6546	39.2
ERROR	33	24505.166667	742.580808			

FACTORIAL/POOLED ERROR Least square estimation AOV For W Weed LOLMG Annual ryegrass Mar-31-2022 No/0.25m2 Apr-5-2022 120 13 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	254.703125				
R	3	32.932292	10.977431	3.031	0.0430	
A	2	50.843750	25.421875	7.020	0.0029	1.4
B	3	31.432292	10.477431	2.893	0.0499	1.6
AB	6	19.989583	3.331597	0.920	0.4932	2.7
ERROR	33	119.505208	3.621370			

FACTORIAL/POOLED ERROR Least square estimation AOV For W Weed LOLMG Annual ryegrass Apr-19-2022 CONTRO % 0 100 Apr-20-2022 139 32 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	67541.250000				
R	3	1575.583333	525.194444	1.136	0.3488	
A	2	15484.625000	7742.312500	16.748	0.0001	15.5
B	3	29060.416667	9686.805556	20.954	0.0001	17.9
AB	6	6165.208333	1027.534722	2.223	0.0655	30.9
ERROR	33	15255.416667	462.285354			

FACTORIAL/POOLED ERROR Least square estimation AOV For W Weed LOLMG Annual ryegrass Apr-19-2022 No/0.25m2 Apr-20-2022 139 32 (Data Column 7)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	282.828125				
R	3	16.473958	5.491319	2.127	0.1156	
A	2	59.281250	29.640625	11.479	0.0002	1.2
B	3	98.307292	32.769097	12.690	0.0001	1.3
AB	6	23.552083	3.925347	1.520	0.2023	2.3
ERROR	33	85.213542	2.582229			

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Options for controlling Italian ryegrass prior to soybean planting

Trial ID: MSB1-22 Cooperator Trial ID:
Protocol ID: MSB1-22 Location: Royal Oak, MD Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Maryland Soybean Board
Investigator (Creator): Kurt Vollmer

FACTORIAL/POOLED ERROR Least square estimation AOV For W Weed LOLMG Annual ryegrass May-9-2022 CONTRO % 0 100 May-10-2022 159 52 (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	59315.479167				
R	3	937.395833	312.465278	0.492	0.6904	
A	2	13091.291667	6545.645833	10.304	0.0003	18.1
B	3	16487.395833	5495.798611	8.651	0.0002	20.9
AB	6	7835.041667	1305.840278	2.056	0.0858	36.3
ERROR	33	20964.354167	635.283460			

FACTORIAL/POOLED ERROR Least square estimation AOV For W Weed LOLMG Annual ryegrass May-9-2022 Height IN May-10-2022 159 52 (Data Column 9)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	534.953125				
R	3	29.932292	9.977431	1.764	0.1732	
A	2	100.343750	50.171875	8.871	0.0008	1.7
B	3	202.182292	67.394097	11.917	0.0001	2.0
AB	6	15.864583	2.644097	0.468	0.8273	3.4
ERROR	33	186.630208	5.655461			

Pest Type
W, Weed = Weed or volunteer crop
Pest Code
LOLMG, Lolium multiflorum gaudini, Annual ryegrass = US
Rating Type
CONTRO = control / burndown or knockdown
Height = height
Rating Unit/Min/Max
%, 0, 100 = percent
IN, , = inch

Means followed by same letter or symbol do not significantly differ (P=.05, LSD).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Maryland

Evaluation of non-glyphosate burndown programs in soybean

Trial ID: MSB2-22 Cooperator Trial ID:
Protocol ID: MSB2-22 Location: Wye Island Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Maryland Soybean Board
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer

Status: E established
ARM Trial Created On: Apr-18-2022
Initiation Date: Apr-29-2022
Completion Date: Jun-9-2022

Trial Location
City: Queenstown **Country:** USA United States
State/Prov.: Maryland
Postal Code: 21658

Latitude of LL Corner °: 38.8964121 N
Longitude of LL Corner °: -76.1376641 W

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer
E-mail: kvollmer@umd.edu
City: Queenstown **State/Prov:** MD **Postal Code:** 21658
Role: SPONSR sponsor
Sponsor: Maryland Soybean Board

Pest Description
Pest 1 Type: W **Code:** ERICA Erigeron canadensis **Entry Date:** May-2-2022
Common Name: mare's-tail **Stage Scale:** BBCH
Artificial Population: N no

Pest 2 Type: W **Code:** SECCE Secale cereale **Entry Date:** Aug-8-2022
Common Name: Rye **Stage Scale:** BBCH
Artificial Population: Y yes

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2
Replications: 4 **Treatments:** 15 **Plots:** 60 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: W-02
% Sand: 20 **% OM:** 2.1 **Texture:** SIL silt loam
% Silt: 67 **Soil Name:** Mattapex-Butlertown silt loam
% Clay: 13
pH: 6.3 **CEC:** 4.2

Application Description

	A	B
Application Date	Apr-29-2022	May-10-2022
Appl. Start Time	3:35 PM	9:30 AM
Appl. Stop Time	5:33 PM	10:10 AM
Application Method	SPRAY	SPRAY
Application Timing	PREPLA	PREPLA
Application Placement	BROADC	BROADC
Applied By	Vollmer, K.	Vollmer, K.
Appl. Entry Date	May-2-2022	May-10-2022
Air Temperature Start, Stop	62, 64 F	61, 61 F
% Relative Humidity Start, Stop	21, 20	34, 34
Wind Velocity+Dir. Start	10 MPH, SSE	10 MPH, SSW
Wind Velocity+Dir. Stop	10 MPH, WNW	10 MPH, SSW
Wet Leaves (Y/N)	N, no	N, no
Soil Moisture	DRY	SLIWET
% Cloud Cover		0

University of Maryland

Evaluation of non-glyphosate burndown programs in soybean

Trial ID: MSB2-22 Cooperator Trial ID:
Protocol ID: MSB2-22 Location: Wye Island Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Maryland Soybean Board
Investigator (Creator): Kurt Vollmer

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	ERICA, W, BBCH	ERICA, W, BBCH
Height Average	5 IN	
Height Minimum, Maximum	3, 9	
Pest 2 Code, Type, Scale	SECCE, W, BBCH	SECCE, W, BBCH
Height Average	3.6 FT	4.6 FT
Height Minimum, Maximum	3, 4	4, 5

Application Equipment

	A	B
Equipment Type	BACCAI	BACCAI
Operation Pressure	19 PSI	19 PSI
Nozzle Type	TTI	TTI
Nozzle Tip Size, Color	11002, yellow	11002, yellow
Nozzle Spacing	18.0 IN	18.0 IN
Nozzles/Row	6.0	6.0
Boom Length	6.0 FT	6.0 FT
Boom Height	12.0 IN	12.0 IN
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Application Amount	15 GAL/AC	15 GAL/AC
Mix Size	1.0 GAL	2.0 L
Propellant	COMCO2	COMCO2

Equipment Comment: 8002 nozzles used to apply glufosinate and gramoxone treatments at 23 PSI.

Notes

Context	Date	By	Notes
STATUS	Apr-18-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-2-2022	Kurt Vollmer	Automatically added by ARM: Trial Status changed to: E: changed by (EMDVOK).
STATUS	May-2-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

University of Maryland

Evaluation of non-glyphosate burndown programs in soybean

Trial ID: MSB2-22 Cooperator Trial ID:
Protocol ID: MSB2-22 Location: Wye Island Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Maryland Soybean Board
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	4*	5*	6*	8*
	Pest Type				W, Weed		W, Weed		W, Weed	
	Pest Code				ERICA		ERICA		WEEDS	WEED BL
	Pest Name				mare's-tail		mare's-tail		average weed co>	
	Crop Type, Code					C, SECCE		C, SECCE		
	Crop Name					Rye		Rye		
	Rating Date				May-20-2022	May-20-2022	May-26-2022	May-26-2022	May-26-2022	Jun-9-2022
	Rating Type				CONTRO	CONTROL	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				May-20-2022	May-20-2022	May-26-2022	May-26-2022	May-27-2022	Sep-28-2022
	Days After First/Last Applic.				21, 10	21, 10	27, 16	27, 16	27, 16	41, 30
	ARM Action Codes									
1	untreated check				0.0	0.0	0.0	0.0	0.0	0.0
2	Select Max	0.121	lb ai/a	A	75.8 b	61.3 c	87.3 a	50.0 b	69.0 b	25.0 e
	nonionic surfactant	0.25	% v/v	A						
	Enlist One	0.95	lb ae/a	B						
3	Select Max	0.121	lb ai/a	A	84.5 ab	67.5 bc	92.0 a	50.0 b	71.3 b	
	nonionic surfactant	0.25	% v/v	A						
	Xtendimax Vaporgrip	0.5	lb ae/a	B						
	Reign LC	0.27	fl oz/a	B						
	Delta Locke	26	fl oz/a	B						
4	Enlist One	0.95	lb ae/a	A	92.8 ab	47.5 c	86.0 a	60.8 b	73.8 b	55.0 d
	Select Max	0.121	lb ai/a	B						
	nonionic surfactant	0.25	% v/v	B						
5	Xtendimax Vaporgrip	0.5	lb ae/a	A	95.0 ab	25.0 d	98.0 a	50.0 b	74.5 b	
	Reign LC	0.27	fl oz/a	A						
	Delta Locke	26	fl oz/a	A						
	Select Max	0.121	lb ai/a	B						
	nonionic surfactant	0.25	% v/v	B						
6	Sharpen	0.0445	lb ai/a	A	94.3 ab	51.3 c	98.8 a	50.0 b	74.8 b	65.0 cd
	ammonium sulfate	1.58	lb/a	A						
	methylated seed oil	1	% v/v	A						
	Select Max	0.121	lb ai/a	A						
	nonionic surfactant	0.25	% v/v	A						
7	Sharpen	0.0445	lb ai/a	A	99.0 a	50.0 c	99.0 a	50.0 b	75.0 b	75.0 bc
	ammonium sulfate	1.58	lb/a	A						
	methylated seed oil	1	% v/v	A						
	Select Max	0.121	lb ai/a	B						
	nonionic surfactant	0.25	% v/v	B						
8	Select Max	0.121	lb ai/a	A	99.0 a	58.8 c	99.0 a	50.0 b	75.0 b	77.5 bc
	nonionic surfactant	0.25	% v/v	A						
	Sharpen	0.0445	lb ai/a	B						
	ammonium sulfate	1.58	lb/a	B						
	methylated seed oil	1	% v/v	B						
9	Roundup PowerMax	0.77	lb ae/a	A	79.8 ab	99.8 a	80.8 a	100.0 a	90.5 a	90.0 ab
	Enlist One	0.95	lb ae/a	A						
	ammonium sulfate	3	lb/a	A						
10	Roundup PowerMax	0.77	lb ae/a	A	87.5 ab	97.3 a	95.3 a	99.0 a	97.5 a	
	Xtendimax Vaporgrip	0.5	lb ae/a	A						
	Reign LC	0.27	fl oz/a	A						
	Delta Locke	26	fl oz/a	A						
11	Roundup PowerMax	0.77	lb ae/a	A	97.8 a	93.3 ab	85.8 a	95.8 a	91.0 a	100.0 a
	Liberty 280	0.79	lb ai/a	A						
	ammonium sulfate	3	lb/a	A						
12	Roundup PowerMax	0.77	lb ae/a	A	98.3 a	93.0 ab	99.0 a	86.5 a	93.3 a	100.0 a
	Gramoxone SL 2.0	1	lb ai/a	A						
	ammonium sulfate	3	lb/a	A						
	nonionic surfactant	0.25	% v/v	A						
13	Roundup PowerMax	0.77	lb ae/a	A	37.5 c	100.0 a	23.8 b	100.0 a	62.3 b	88.8 ab
	ammonium sulfate	3	lb/a	A						
14	Liberty 280	0.79	lb ai/a	A	96.8 a	90.8 ab	73.0 a	63.8 b	68.5 b	100.0 a
	ammonium sulfate	3	lb/a	A						

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
^Calculated from residual.

University of Maryland

Evaluation of non-glyphosate burndown programs in soybean

Trial ID: MSB2-22 Cooperator Trial ID:
Protocol ID: MSB2-22 Location: Wye Island Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Maryland Soybean Board
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	4*	5*	6*	8*
	Pest Type				W, Weed		W, Weed		W, Weed	
	Pest Code				ERICA		ERICA		WEEDS	WEED BL
	Pest Name				mare's-tail		mare's-tail		average weed co>	
	Crop Type, Code					C, SECCE		C, SECCE		
	Crop Name					Rye		Rye		
	Rating Date				May-20-2022	May-20-2022	May-26-2022	May-26-2022	May-26-2022	Jun-9-2022
	Rating Type				CONTRO	CONTROL	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				May-20-2022	May-20-2022	May-26-2022	May-26-2022	May-27-2022	Sep-28-2022
	Days After First/Last Applic.				21, 10	21, 10	27, 16	27, 16	27, 16	41, 30
	ARM Action Codes									
15	Gramoxone SL 2.0	1	lb ai/a	A	97.8 a	99.5 a	99.0 a	99.5 a	99.8 a	97.5 a
	nonionic surfactant	0.25	% v/v	A						
	LSD P=.05				13.11	19.67	19.63	16.23	10.36	12.03
	Standard Deviation				9.17	13.75	13.73	11.35	7.24	8.33
	CV				10.39	18.6	15.8	15.8	9.08	10.48
	Grand Mean				88.25	73.91	86.89	71.80	79.71	79.43
	Levene's F^				1.306	0.834	0.791	1.718	0.929	1.043
	Levene's Prob(F)				0.248	0.623	0.665	0.092	0.533	0.431
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				0.9093*	0.9565*	0.828*	0.7645*	0.8959*	0.9525
	P(Shapiro-Wilk)^				0.0005*	0.042*	0.0*	0.0*	0.0002*	0.0684
	Skewness^				-1.1555*	0.1044	-1.788*	-0.165	-0.4452	-0.0635
	P(Skewness)^				0.0009*	0.7511	0.0*	0.6164	0.1796	0.8643
	Kurtosis^				3.6392*	1.8378*	7.6887*	7.2114*	2.7972*	2.3606*
	P(Kurtosis)^				0.0*	0.0062*	0.0*	0.0*	0.0*	0.0022*
	Replicate F				1.271	1.507	3.643	0.275	2.415	2.346
	Replicate Prob(F)				0.2975	0.2278	0.0208	0.8431	0.0811	0.0927
	Treatment F				12.827	13.306	8.435	16.549	11.114	32.214
	Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
^Calculated from residual.

University of Maryland

Evaluation of non-glyphosate burndown programs in soybean

Trial ID: MSB2-22 Cooperator Trial ID:
Protocol ID: MSB2-22 Location: Wye Island Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Maryland Soybean Board
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	9*
	Pest Type				
	Pest Code				WEED G
	Pest Name				
	Crop Type, Code				
	Crop Name				
	Rating Date				Jun-9-2022
	Rating Type				CONTRO
	Rating Unit/Min/Max				%, 0, 100
	Data Entry Date				Sep-28-2022
	Days After First/Last Applic.				41, 30
	ARM Action Codes				
1	untreated check				0.0
2	Select Max	0.121	lb ai/a	A	0.0 c
	nonionic surfactant	0.25	% v/v	A	
	Enlist One	0.95	lb ae/a	B	
3	Select Max	0.121	lb ai/a	A	
	nonionic surfactant	0.25	% v/v	A	
	Xtendimax Vaporgrip	0.5	lb ae/a	B	
	Reign LC	0.27	fl oz/a	B	
	Delta Locke	26	fl oz/a	B	
4	Enlist One	0.95	lb ae/a	A	0.0 c
	Select Max	0.121	lb ai/a	B	
	nonionic surfactant	0.25	% v/v	B	
5	Xtendimax Vaporgrip	0.5	lb ae/a	A	
	Reign LC	0.27	fl oz/a	A	
	Delta Locke	26	fl oz/a	A	
	Select Max	0.121	lb ai/a	B	
	nonionic surfactant	0.25	% v/v	B	
6	Sharpen	0.0445	lb ai/a	A	5.0 bc
	ammonium sulfate	1.58	lb/a	A	
	methylated seed oil	1	% v/v	A	
	Select Max	0.121	lb ai/a	A	
	nonionic surfactant	0.25	% v/v	A	
7	Sharpen	0.0445	lb ai/a	A	1.3 c
	ammonium sulfate	1.58	lb/a	A	
	methylated seed oil	1	% v/v	A	
	Select Max	0.121	lb ai/a	B	
	nonionic surfactant	0.25	% v/v	B	
8	Select Max	0.121	lb ai/a	A	13.8 b
	nonionic surfactant	0.25	% v/v	A	
	Sharpen	0.0445	lb ai/a	B	
	ammonium sulfate	1.58	lb/a	B	
	methylated seed oil	1	% v/v	B	
9	Roundup PowerMax	0.77	lb ae/a	A	100.0 a
	Enlist One	0.95	lb ae/a	A	
	ammonium sulfate	3	lb/a	A	
10	Roundup PowerMax	0.77	lb ae/a	A	
	Xtendimax Vaporgrip	0.5	lb ae/a	A	
	Reign LC	0.27	fl oz/a	A	
	Delta Locke	26	fl oz/a	A	
11	Roundup PowerMax	0.77	lb ae/a	A	100.0 a
	Liberty 280	0.79	lb ai/a	A	
	ammonium sulfate	3	lb/a	A	
12	Roundup PowerMax	0.77	lb ae/a	A	100.0 a
	Gramoxone SL 2.0	1	lb ai/a	A	
	ammonium sulfate	3	lb/a	A	
	nonionic surfactant	0.25	% v/v	A	
13	Roundup PowerMax	0.77	lb ae/a	A	100.0 a
	ammonium sulfate	3	lb/a	A	
14	Liberty 280	0.79	lb ai/a	A	98.8 a
	ammonium sulfate	3	lb/a	A	

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
^Calculated from residual.

University of Maryland

Evaluation of non-glyphosate burndown programs in soybean

Trial ID: MSB2-22 Cooperator Trial ID:
Protocol ID: MSB2-22 Location: Wye Island Trial Year: 2021
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Maryland Soybean Board
Investigator (Creator): Kurt Vollmer

Pest Type	
Pest Code	WEED G
Pest Name	
Crop Type, Code	
Crop Name	
Rating Date	Jun-9-2022
Rating Type	CONTRO
Rating Unit/Min/Max	%, 0, 100
Data Entry Date	Sep-28-2022
Days After First/Last Applic.	41, 30
ARM Action Codes	

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	9*
15	Gramoxone SL 2.0	1	lb ai/a	A	100.0 a
	nonionic surfactant	0.25	% v/v	A	

LSD P=.05	8.96
Standard Deviation	6.20
CV	11.03
Grand Mean	56.25
Levene's F^	0.787
Levene's Prob(F)	0.641
Rank X2	.
P(Rank X2)	.
Shapiro-Wilk^	0.7113*
P(Shapiro-Wilk)^	0.0*
Skewness^	2.6216*
P(Skewness)^	0.0*
Kurtosis^	11.8254*
P(Kurtosis)^	0.0*
Replicate F	0.881
Replicate Prob(F)	0.4621
Treatment F	261.532
Treatment Prob(F)	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
^Calculated from residual.

University of Maryland

TENDOVO: Crop Tolerance and Efficacy in Conventional Till Soybean

Trial ID: Soy1-22 Cooperator Trial ID:
Protocol ID: Soy1-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: May-9-2022
Initiation Date: Jun-1-2022
Completion Date: Nov-9-2022

Trial Location
City: Queenstown **Country:** United States
State/Prov.: Maryland
Postal Code: 21658

Latitude of LL Corner °: 38.91427 N
Longitude of LL Corner °: -76.14592 W

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
Organization: University of Maryland
Address 1: 124 Wye Narrows Drive
Country: USA United States **E-mail:** kvollmer@umd.edu
City: Queenstown **State/Prov:** MD **Postal Code:** 21658
Role: SPONSR sponsor
Sponsor: Syngenta

Crop Description
Crop 1: C GLXMA Glycine max Soybean
Entry Date: Jun-2-2022 **Stage Scale:** BBCH
Variety: S46XF31S
Attributes: XtendFlex/STS
Planting Date: Jun-1-2022 **Planting Rate:** 122000 S/A
Depth: 1 IN
Rows per Plot: 7 **Planting Method:** PLANTD planted
Row Spacing: 15 IN **Planting Equipment:** FE field equipment
Emergence Date: Jun-7-2022
Harvest Date: Nov-9-2022 **Harvest Equipment:** ALMACO small plot combine
Harvested Width: 5 FT
% Standard Moisture: 11.8 **Harvested Length:** 25 FT

Pest Description
Pest 1 Type: W **Code:** AMACH Amaranthus hybridus **Entry Date:** Aug-11-2022
Common Name: smooth pigweed **Stage Scale:** BBCH
Artificial Population: N no

Pest 2 Type: W **Code:** CHEAL Chenopodium album **Entry Date:** Aug-11-2022
Common Name: common lambsquarters **Stage Scale:** BBCH
Artificial Population: N no

Pest 3 Type: W **Code:** IPOSS Ipomoea sp. **Entry Date:** Aug-11-2022
Common Name: Morning glory **Stage Scale:** BBCH
Artificial Population: N no

Pest 4 Type: W **Code:** SETFA Setaria faberi **Entry Date:** Aug-11-2022
Common Name: Giant foxtail **Stage Scale:** BBCH
Artificial Population: N no

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2
Replications: 4 **Treatments:** 10 **Plots:** 40 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: J-04
% Sand: 50.5 **% OM:** 2.3 **Texture:** SIL silt loam
% Silt: 36 **Soil Name:** Mattapex-Butlertown silt laom
% Clay: 12.9
pH: 6.2 **CEC:** 5.8

University of Maryland

TENDOVO: Crop Tolerance and Efficacy in Conventional Till Soybean

Trial ID: Soy1-22 Cooperator Trial ID:
Protocol ID: Soy1-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Application Description

	A	B
Application Date	Jun-2-2022	Jun-30-2022
Appl. Start Time	9:10 AM	10:15 AM
Appl. Stop Time	10:00 AM	12:09 PM
Application Method	SPRAY	SPRAY
Application Timing	PREPRE	POSPOS
Application Placement	BROSOI	BROFOL
Applied By	Vollmer, K.	Vollmer, K.
Appl. Entry Date	Jun-2-2022	Jul-14-2022
Air Temperature Start, Stop	69, 71 F	78, 84 -
% Relative Humidity Start, Stop	100, 97	81, 52
Wind Velocity+Dir. Start	3 MPH, SW	3 MPH, S
Wind Velocity+Dir. Stop	1 MPH, SW	3 MPH, W
Wind Velocity+Dir. Max	3 MPH, -	3 MPH, -
Wet Leaves (Y/N)	N, no	N, no
Soil Moisture	SLIWET	DRY
% Cloud Cover	100	15
Next Moisture Occurred On	Jun-2-2022	Jul-2-2022
Time to Next Moisture	4.0 HR	2.0 DAY
Moisture 6 Hours after Appl.	1.61 IN	0 IN
Moisture 1 Week after Appl.	0.43 IN	1.5 IN
Problems with Application?	N, no	N, no

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale	GLXMA, BSOY	GLXMA, BSOY
Days after Emergence	-5	23
Stage Majority, Percent		V3, 100
Stage Minimum, Percent		V3, 100
Stage Maximum, Percent		V3, 100
Height Average		4.5 IN
Height Minimum, Maximum		4, 5

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	AMACH, W, BBCH	AMACH, W, BBCH
Stage Majority, Percent	00, 100	
Height Average		4.5 IN
Height Minimum, Maximum		2.5, 7
Pest 2 Code, Type, Scale	CHEAL, W, BBCH	CHEAL, W, BBCH
Stage Majority, Percent	00, 100	
Height Average		3.8 IN
Height Minimum, Maximum		2, 6
Pest 3 Code, Type, Scale	IPOSS, W, BBCH	IPOSS, W, BBCH
Stage Majority, Percent	00, 100	
Pest 4 Code, Type, Scale	SETFA, W, BBCH	SETFA, W, BBCH
Stage Majority, Percent	00, 100	
Height Average		10.3 IN
Height Minimum, Maximum		7, 12

University of Maryland

TENDOVO: Crop Tolerance and Efficacy in Conventional Till Soybean

Trial ID: Soy1-22 Cooperator Trial ID:
Protocol ID: Soy1-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Application Equipment

	A	B
Equipment Type	BACCAI	BACCAI
Operation Pressure	23 PSI	19 PSI
Nozzle Type	FLAFAN	TEEJAI
Nozzle Tip Size, Color	8002, Yellow	11002, Yellow
Nozzle Spacing	18.0 IN	18.0 IN
Nozzles/Row	6.0	6.0
Boom Length	6.0 FT	6.0 FT
Boom Height	12.0 IN	12.0 IN
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Application Amount	15 GAL/AC	15 GAL/AC
Mix Size	2.0 L	2.0 L
Propellant	COMCO2	COMCO2

Notes

Context	Date	By	Notes
STATUS	May-9-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Jun-2-2022	Kurt Vollmer	Automatically added by ARM: Trial Status changed to: E: changed by (EMDVOK).
STATUS	Jun-2-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

University of Maryland

TENDOVO: Crop Tolerance and Efficacy in Conventional Till Soybean

Trial ID: Soy1-22 Cooperator Trial ID:
Protocol ID: Soy1-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	3*	4*	5*	6*	7*
	Pest Type						W, Weed	W, Weed	W, Weed	
	Pest Code						AMACH	CHEAL	IPOSS	GRASSES
	Pest Name						smooth pigweed	common lambsqua>	Morning glory	
	Crop Type, Code				C, GLXMA	C, GLXMA				
	Crop Name				Soybean	Soybean				
	Rating Date				Jun-14-2022	Jun-30-2022	Jun-30-2022	Jun-30-2022	Jun-30-2022	Jun-30-2022
	Rating Type				PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-20-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022
	Days After First/Last Applic.				12, 12	28, 28	28, 28	28, 28	28, 28	28, 28
	Trt-Eval Interval				12 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A
	Days After Emergence				7 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1
	ARM Action Codes									
1	Untreated Check				0.0	0.0	0.0	0.0	0.0	0.0
2	Tendovo	1.25	lb ai/a	A	0.0 -	2.5 -	100.0 -	97.5 -	86.3 -	87.0 ab
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						
3	Tendovo	1.57	lb ai/a	A	0.0 -	0.0 -	100.0 -	100.0 -	82.3 -	83.5 ab
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						
4	Boundary 6.5 EC	1.22	lb ai/a	A	0.0 -	2.5 -	100.0 -	100.0 -	58.8 -	71.3 ab
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						
6	Sonic	0.197	lb ai/a	A	0.0 -	1.3 -	87.5 -	100.0 -	100.0 -	58.5 ab
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						
7	Fierce XLT	0.146	lb ai/a	A	0.0 -	3.3 -	100.0 -	100.0 -	98.5 -	92.5 ab
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						
8	Zidua Pro	0.144	lb ai/a	A	0.0 -	0.0 -	100.0 -	100.0 -	75.5 -	90.0 ab
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						
9	Authority Edge	0.2	lb ai/a	A	0.0 -	2.5 -	100.0 -	100.0 -	88.3 -	42.8 b
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,10,11,15 because error mean square = 0.
^Calculated from residual.

University of Maryland

TENDOVO: Crop Tolerance and Efficacy in Conventional Till Soybean

Trial ID: Soy1-22 Cooperator Trial ID:
Protocol ID: Soy1-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	3*	4*	5*	6*	7*
	Pest Type						W, Weed	W, Weed	W, Weed	
	Pest Code						AMACH	CHEAL	IPOSS	GRASSES
	Pest Name						smooth pigweed	common lambsqua>	Morning glory	
	Crop Type, Code				C, GLXMA	C, GLXMA				
	Crop Name				Soybean	Soybean				
	Rating Date				Jun-14-2022	Jun-30-2022	Jun-30-2022	Jun-30-2022	Jun-30-2022	Jun-30-2022
	Rating Type				PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-20-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022	Jul-5-2022
	Days After First/Last Applic.				12, 12	28, 28	28, 28	28, 28	28, 28	28, 28
	Trt-Eval Interval				12 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A
	Days After Emergence				7 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1	23 DE-1
	ARM Action Codes									
10	Valor SX	0.08	lb ai/a	A	0.0 -	1.3 -	100.0 -	75.0 -	97.5 -	100.0 a
	Metribuzin	0.14	lb ai/a	A						
	Zidua	0.16	lb ai/a	A						
	Roundup PowerMax 3	1.13	lb ae/a	B						
	ammonium sulfate	2.55	lb/a	B						
	LSD P=.05				.	5.46	13.00	25.75	29.46	35.29
	Standard Deviation				0.00	3.71	8.84	17.51	20.04	24.00
	CV				0.0	224.24	8.98	18.14	23.33	30.69
	Grand Mean				0.00	1.66	98.44	96.56	85.88	78.19
	Levene's F^				.	0.591	0.643	0.648	0.755	0.553
	Levene's Prob(F)				.	0.757	0.716	0.713	0.629	0.786
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				.	0.8814*	0.5947*	0.6172*	0.8251*	0.9586
	P(Shapiro-Wilk)^				.	0.0022*	0.0*	0.0*	0.0001*	0.2517
	Skewness^				.	1.1672*	-2.7492*	-2.6971*	-1.8819*	-0.4236
	P(Skewness)^				.	0.0114*	0.0*	0.0*	0.0001*	0.3362
	Kurtosis^				.	0.8267	13.5402*	13.2213*	5.1898*	-0.2753
	P(Kurtosis)^				.	0.3365	0.0*	0.0*	0.0*	0.7473
	Replicate F				0.000	0.957	1.000	1.233	0.300	5.918
	Replicate Prob(F)				1.0000	0.4313	0.4123	0.3227	0.8247	0.0043
	Treatment F				0.000	0.435	1.000	1.000	1.931	2.598
	Treatment Prob(F)				1.0000	0.8693	0.4586	0.4586	0.1150	0.0426

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,10,11,15 because error mean square = 0.
^Calculated from residual.

University of Maryland

TENDOVO: Crop Tolerance and Efficacy in Conventional Till Soybean

Trial ID: Soy1-22 Cooperator Trial ID:
Protocol ID: Soy1-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	9*	10*	11*	12*	13*	15*
	Pest Type					W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code					AMACH	CHEAL	IPOSS	SETFA	AMACH
	Pest Name					smooth pigweed	common lambsqua>	Morning glory	Giant foxtail	smooth pigweed
	Crop Type, Code				C, GLXMA					
	Crop Name				Soybean					
	Rating Date				Jul-14-2022	Jul-14-2022	Jul-14-2022	Jul-14-2022	Jul-14-2022	Jul-29-2022
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-14-2022	Jul-14-2022	Jul-14-2022	Jul-14-2022	Jul-14-2022	Aug-3-2022
	Days After First/Last Applic.				42, 14	42, 14	42, 14	42, 14	42, 14	57, 29
	Trt-Eval Interval									
	Days After Emergence				37 DE-1	37 DE-1	37 DE-1	37 DE-1	37 DE-1	52 DE-1
	ARM Action Codes									
1	Untreated Check				0.0	0.0	0.0	0.0	0.0	0.0
2	Tendovo	1.25	lb ai/a	A	0.8 -	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						
3	Tendovo	1.57	lb ai/a	A	4.5 -	100.0 -	100.0 -	100.0 -	99.0 -	100.0 -
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						
4	Boundary 6.5 EC	1.22	lb ai/a	A	6.3 -	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						
6	Sonic	0.197	lb ai/a	A	7.5 -	100.0 -	100.0 -	100.0 -	98.3 -	100.0 -
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						
7	Fierce XLT	0.146	lb ai/a	A	4.5 -	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						
8	Zidua Pro	0.144	lb ai/a	A	5.0 -	100.0 -	100.0 -	99.8 -	100.0 -	100.0 -
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						
9	Authority Edge	0.2	lb ai/a	A	6.3 -	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -
	Volt Edge	20	fl oz/a	B						
	Intact	0.5	% v/v	B						
	Class Act Ridion	1	% v/v	B						
	Tavium	1.49	lb ai/a	B						
	Roundup PowerMax 3	1.13	lb ae/a	B						

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,10,11,15 because error mean square = 0.
^Calculated from residual.

University of Maryland

TENDOVO: Crop Tolerance and Efficacy in Conventional Till Soybean

Trial ID: Soy1-22 Cooperator Trial ID:
Protocol ID: Soy1-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code						
	Pest Type					W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code					AMACH	CHEAL	IPOSS	SETFA	AMACH
	Pest Name					smooth pigweed	common lambsqua>	Morning glory	Giant foxtail	smooth pigweed
	Crop Type, Code				C, GLXMA					
	Crop Name				Soybean					
	Rating Date				Jul-14-2022	Jul-14-2022	Jul-14-2022	Jul-14-2022	Jul-14-2022	Jul-29-2022
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-14-2022	Jul-14-2022	Jul-14-2022	Jul-14-2022	Jul-14-2022	Aug-3-2022
	Days After First/Last Applic.				42, 14	42, 14	42, 14	42, 14	42, 14	57, 29
	Trt-Eval Interval									
	Days After Emergence				37 DE-1	37 DE-1	37 DE-1	37 DE-1	37 DE-1	52 DE-1
	ARM Action Codes									
					9*	10*	11*	12*	13*	15*
10	Valor SX	0.08	lb ai/a	A	2.5 -	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -
	Metribuzin	0.14	lb ai/a	A						
	Zidua	0.16	lb ai/a	A						
	Roundup PowerMax 3	1.13	lb ae/a	B						
	ammonium sulfate	2.55	lb/a	B						
	LSD P=.05				12.12	.	.	0.26	1.87	.
	Standard Deviation				8.24	0.00	0.00	0.18	1.27	0.00
	CV				177.05	0.0	0.0	0.18	1.28	0.0
	Grand Mean				4.66	100.00	100.00	99.97	99.66	100.00
	Levene's F^				0.46	.	.	0.643	0.576	.
	Levene's Prob(F)				0.854	.	.	0.716	0.769	.
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				0.9166*	.	.	0.5947*	0.727*	.
	P(Shapiro-Wilk)^				0.0168*	.	.	0.0*	0.0*	.
	Skewness^				1.0501*	.	.	-2.7492*	-2.3319*	.
	P(Skewness)^				0.0215*	.	.	0.0*	0.0*	.
	Kurtosis^				0.9568	.	.	13.5402*	10.3786*	.
	P(Kurtosis)^				0.2672	.	.	0.0*	0.0*	.
	Replicate F				1.045	0.000	0.000	1.000	1.413	0.000
	Replicate Prob(F)				0.3932	1.0000	1.0000	0.4123	0.2669	1.0000
	Treatment F				0.280	0.000	0.000	1.000	1.103	0.000
	Treatment Prob(F)				0.9550	1.0000	1.0000	0.4586	0.3970	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,10,11,15 because error mean square = 0.
^Calculated from residual.

University of Maryland

TENDOVO: Crop Tolerance and Efficacy in Conventional Till Soybean

Trial ID: Soy1-22 Cooperator Trial ID:
Protocol ID: Soy1-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	16*	17*	18*	21*
	Pest Type				W, Weed	W, Weed	W, Weed	
	Pest Code				CHEAL	IPOSS	SETFA	
	Pest Name				common lambsqua>	Morning glory	Giant foxtail	
	Crop Type, Code							
	Crop Name							
	Rating Date				Jul-29-2022	Jul-29-2022	Jul-29-2022	Nov-9-2022
	Rating Type				CONTRO	CONTRO	CONTRO	YIELD
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	BU, -, -
	Data Entry Date				Aug-3-2022	Aug-3-2022	Aug-3-2022	
	Days After First/Last Applic.				57, 29	57, 29	57, 29	160, 132
	Trt-Eval Interval							
	Days After Emergence				52 DE-1	52 DE-1	52 DE-1	155 DE-1
	ARM Action Codes							TY1
1	Untreated Check				0.0	0.0	0.0	0.0 c
2	Tendovo	1.25	lb ai/a	A	100.0 -	98.3 -	98.0 -	67.7 ab
	Volt Edge	20	fl oz/a	B				
	Intact	0.5	% v/v	B				
	Class Act Ridion	1	% v/v	B				
	Tavium	1.49	lb ai/a	B				
	Roundup PowerMax 3	1.13	lb ae/a	B				
3	Tendovo	1.57	lb ai/a	A	99.5 -	100.0 -	99.5 -	64.8 b
	Volt Edge	20	fl oz/a	B				
	Intact	0.5	% v/v	B				
	Class Act Ridion	1	% v/v	B				
	Tavium	1.49	lb ai/a	B				
	Roundup PowerMax 3	1.13	lb ae/a	B				
4	Boundary 6.5 EC	1.22	lb ai/a	A	100.0 -	100.0 -	97.5 -	71.6 ab
	Volt Edge	20	fl oz/a	B				
	Intact	0.5	% v/v	B				
	Class Act Ridion	1	% v/v	B				
	Tavium	1.49	lb ai/a	B				
	Roundup PowerMax 3	1.13	lb ae/a	B				
6	Sonic	0.197	lb ai/a	A	100.0 -	100.0 -	96.8 -	72.6 ab
	Volt Edge	20	fl oz/a	B				
	Intact	0.5	% v/v	B				
	Class Act Ridion	1	% v/v	B				
	Tavium	1.49	lb ai/a	B				
	Roundup PowerMax 3	1.13	lb ae/a	B				
7	Fierce XLT	0.146	lb ai/a	A	100.0 -	100.0 -	99.3 -	70.4 ab
	Volt Edge	20	fl oz/a	B				
	Intact	0.5	% v/v	B				
	Class Act Ridion	1	% v/v	B				
	Tavium	1.49	lb ai/a	B				
	Roundup PowerMax 3	1.13	lb ae/a	B				
8	Zidua Pro	0.144	lb ai/a	A	100.0 -	75.0 -	100.0 -	72.9 ab
	Volt Edge	20	fl oz/a	B				
	Intact	0.5	% v/v	B				
	Class Act Ridion	1	% v/v	B				
	Tavium	1.49	lb ai/a	B				
	Roundup PowerMax 3	1.13	lb ae/a	B				
9	Authority Edge	0.2	lb ai/a	A	100.0 -	100.0 -	100.0 -	67.9 ab
	Volt Edge	20	fl oz/a	B				
	Intact	0.5	% v/v	B				
	Class Act Ridion	1	% v/v	B				
	Tavium	1.49	lb ai/a	B				
	Roundup PowerMax 3	1.13	lb ae/a	B				

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,10,11,15 because error mean square = 0.
^Calculated from residual.

University of Maryland

TENDOVO: Crop Tolerance and Efficacy in Conventional Till Soybean

Trial ID: Soy1-22 Cooperator Trial ID:
Protocol ID: Soy1-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Syngenta
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code				
Pest Type					W, Weed	W, Weed	W, Weed	
Pest Code					CHEAL	IPOSS	SETFA	
Pest Name					common lambsqua>	Morning glory	Giant foxtail	
Crop Type, Code								
Crop Name								
Rating Date					Jul-29-2022	Jul-29-2022	Jul-29-2022	Nov-9-2022
Rating Type					CONTRO	CONTRO	CONTRO	YIELD
Rating Unit/Min/Max					%, 0, 100	%, 0, 100	%, 0, 100	BU, -, -
Data Entry Date					Aug-3-2022	Aug-3-2022	Aug-3-2022	
Days After First/Last Applic.					57, 29	57, 29	57, 29	160, 132
Trt-Eval Interval								
Days After Emergence					52 DE-1	52 DE-1	52 DE-1	155 DE-1
ARM Action Codes								TY1
10	Valor SX	0.08	lb ai/a	A	100.0 -	98.5 -	100.0 -	78.7 a
	Metribuzin	0.14	lb ai/a	A				
	Zidua	0.16	lb ai/a	A				
	Roundup PowerMax 3	1.13	lb ae/a	B				
	ammonium sulfate	2.55	lb/a	B				
LSD P=.05					0.52	26.27	3.82	8.32
Standard Deviation					0.35	17.86	2.60	5.73
CV					0.35	18.52	2.63	8.9
Grand Mean					99.94	96.47	98.88	64.37
Levene's F^					0.643	0.66	0.584	0.757
Levene's Prob(F)					0.716	0.703	0.762	0.655
Rank X2					.	.	.	.
P(Rank X2)					.	.	.	.
Shapiro-Wilk^					0.5947*	0.652*	0.8706*	0.9759
P(Shapiro-Wilk)^					0.0*	0.0*	0.0012*	0.5404
Skewness^					-2.7492*	-2.7192*	-1.6819*	0.1009
P(Skewness)^					0.0*	0.0*	0.0005*	0.796
Kurtosis^					13.5402*	13.2569*	5.3077*	-0.6505
P(Kurtosis)^					0.0*	0.0*	0.0*	0.3972
Replicate F					1.000	0.900	1.864	2.491
Replicate Prob(F)					0.4123	0.4578	0.1666	0.0815
Treatment F					1.000	0.950	0.974	64.442
Treatment Prob(F)					0.4586	0.4909	0.4755	0.0001

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Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,10,11,15 because error mean square = 0.
^Calculated from residual.

University of Maryland

Engenia vs Enlist Burndown for Glyphosate Resistant Marestail

Trial ID: Soy3a-22 Cooperator Trial ID:
Protocol ID: Soy3-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: BASF
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: Apr-22-2022
Initiation Date: Apr-29-2022
Completion Date: Jun-24-2022

Trial Location
City: Queenstown **Country:** US
State/Prov.: Maryland
Postal Code: 21658

Latitude of LL Corner °: 38.896007 N
Longitude of LL Corner °: -76.138379 W

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
Organization: University of Maryland
Role: SPONSR sponsor
Sponsor: BASF

Crop Description
Crop 1: C GLXMA Glycine max Soybean
Entry Date: May-27-2022 **Stage Scale:** BBCH
Variety: P37T33E
Attributes: Enlist E3
Planting Date: May-27-2022 **Planting Rate:** 150000 S/A

Crop 2: C GLXMA Glycine max Soybean
Entry Date: May-27-2022 **Stage Scale:** BBCH
Variety: S39XF41
Attributes: XtendFlex/STS
Planting Date: May-27-2022 **Planting Rate:** 150000 S/A

Pest Description
Pest 1 Type: W **Code:** ERICA Erigeron canadensis **Entry Date:** May-2-2022
Common Name: mare's-tail **Stage Scale:** BBCH
Artificial Population: N no

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 60 FT
Treated Plot Area: 600.0 FT2
Replications: 4 **Treatments:** 4 **Plots:** 16 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: W-02
% Sand: 20 **% OM:** 2.1 **Texture:** SIL silt loam
% Silt: 67 **Soil Name:** Mattapex-Butlertown silt loam
% Clay: 13 **Fert. Level:** G good
pH: 6.3 **CEC:** 4.2
Soil Drainage: F fair

University of Maryland

Engenia vs Enlist Burndown for Glyphosate Resistant Marestail

Trial ID: Soy3a-22 Cooperator Trial ID:
Protocol ID: Soy3-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: BASF
Investigator (Creator): Kurt Vollmer

Application Description

	A
Application Date	Apr-29-2022
Appl. Start Time	3:35 PM
Appl. Stop Time	5:33 PM
Application Method	SPRAY
Application Timing	PREPLA
Application Placement	BROADC
Applied By	Vollmer, K.
Appl. Entry Date	May-2-2022
Air Temperature Start, Stop	62, 64 F
% Relative Humidity Start, Stop	21, 20
Wind Velocity+Dir. Start	10 MPH, SSE
Wind Velocity+Dir. Stop	10 MPH, WNW
Wet Leaves (Y/N)	N, no
Soil Moisture	DRY
% Cloud Cover	0
Next Moisture Occurred On	Aug-1-2022
Time to Next Moisture	3.0 DAY
Moisture 6 Hours after Appl.	0 IN
Moisture 1 Week after Appl.	0.9 IN

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale	GLXMA, BSOY
Crop 2 Code, BBCH Scale	GLXMA, BSOY

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale	ERICA, W, BBCH
Height Average	5 IN
Height Minimum, Maximum	3, 9
Density Average	48 m2
Density Minimum, Maximum	10, 14

Application Equipment

	A
Equipment Type	BACCAI
Operation Pressure	19 PSI
Nozzle Type	TTI
Nozzle Tip Size, Color	11002, yellow
Nozzle Spacing	18.0 IN
Nozzles/Row	6.0
Boom Length	6.0 FT
Boom Height	12.0 IN
Ground Speed	3 MPH
Carrier	WATER
Application Amount	15 GAL/AC
Mix Size	1.0 GAL
Propellant	COMCO2

Notes

Context	Date	By	Notes
STATUS	Apr-19-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-2-2022	Kurt Vollmer	Automatically added by ARM: Trial Status changed to: E: changed by (EMDVOK).
STATUS	May-2-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

University of Maryland

Engenia vs Enlist Burndown for Glyphosate Resistant Marestail

Trial ID: Soy3a-22 Cooperator Trial ID:
Protocol ID: Soy3-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: BASF
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	5*	6*	7*
	Pest Type				W, Weed	W, Weed		W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				ERICA	ERICA		ERICA	ERICA	ERICA	ERICA
	Pest Name				mare's-tail	mare's-tail		mare's-tail	mare's-tail	mare's-tail	mare's-tail
	Crop Type, Code						C, SECCW				
	Crop Name						Winter rye				
	Rating Date				May-5-2022	May-5-2022	May-5-2022	May-12-2022	May-19-2022	May-26-2022	Jun-10-2022
	Rating Type				CONTRO	DENSIT	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	/0.25m2, -, -	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				May-6-2022	May-6-2022	May-6-2022	May-16-2022	May-20-2022	May-26-2022	Jun-10-2022
	Days After First/Last Applic.				6, 6	6, 6	6, 6	13, 13	20, 20	27, 27	42, 42
	Trt-Eval Interval				6 DA-A	6 DA-A	6 DA-A	13 DA-A	20 DA-A	27 DA-A	42 DA-A
1	Xtendflex				0.0	5.9	0.0	0.0	0.0	0.0	0.0
	Untreated Check										
	Select Max	0.121	lb ai/a	A							
	nonionic surfactant	0.25	% v/v	A							
2	Xtendflex				84.5 -	1.5 -	50.0 -	90.0 a	96.8 a	98.0 a	97.0 a
	Engenia	0.47	lb ae/a	A							
	Roundup PowerMax 3	1.13	lb ae/a	A							
	Zidua SC	0.106	lb ai/a	A							
	Sentris = AEGOS	0.363	lb ai/a	A							
3	Enlist E3				22.5 -	5.0 -	25.0 -	0.0 c	0.0 b	0.0 b	0.0 c
	Untreated Check										
	Select Max	0.121	lb ai/a	A							
	nonionic surfactant	0.25	% v/v	A							
4	Enlist E3				63.3 -	3.6 -	37.5 -	79.3 b	92.7 a	93.2 a	77.0 b
	Enlist One	0.95	lb ae/a	A							
	Roundup PowerMax 3	1.13	lb ae/a	A							
	Zidua SC	0.106	lb ai/a	A							
	LSD P=.05				58.82	5.60	43.26	4.34	6.36	6.07	4.09
	Standard Deviation				34.00	3.24	25.00	2.39	3.50	3.34	2.25
	CV				59.91	95.98	66.67	4.39	5.79	5.48	4.01
	Grand Mean				56.75	3.38	37.50	54.36	60.36	61.00	56.18
	Levene's F^				0.303	0.02	2.167	0.407	0.203	1.065	0.847
	Levene's Prob(F)				0.746	0.98	0.171	0.679	0.82	0.389	0.464
	Rank X2				.	.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.	.
	Shapiro-Wilk^				0.9511	0.9251	0.9548	0.9687	0.9195	0.9569	0.9628
	P(Shapiro-Wilk)^				0.6531	0.3306	0.7082	0.8731	0.3145	0.7319	0.8065
	Skewness^				0.108	0.4688	-0.3611	0.1881	0.8097	-0.0458	0.2425
	P(Skewness)^				0.8826	0.5253	0.6233	0.8065	0.3044	0.9524	0.7525
	Kurtosis^				-1.2335	-1.0137	-0.5907	0.3327	-0.0617	0.3906	-0.8022
	P(Kurtosis)^				0.3911	0.4785	0.6772	0.8229	0.9668	0.7929	0.5919
	Replicate F				1.321	1.500	0.333	1.419	2.678	1.799	0.482
	Replicate Prob(F)				0.3519	0.3071	0.8022	0.3408	0.1580	0.2639	0.7088
	Treatment F				3.436	1.185	1.000	1649.872	937.698	1050.239	2027.859
	Treatment Prob(F)				0.1013	0.3683	0.4219	0.0001	0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 4-7=3.6; 8=3
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
^Calculated from residual.

University of Maryland

Engenia vs Enlist Burndown for Glyphosate Resistant Marestail

Trial ID: Soy3a-22 Cooperator Trial ID:
Protocol ID: Soy3-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: BASF
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	8*
	Pest Type				W, Weed
	Pest Code				ERICA
	Pest Name				mare's-tail
	Crop Type, Code				
	Crop Name				
	Rating Date				Jun-24-2022
	Rating Type				CONTRO
	Rating Unit/Min/Max				%, 0, 100
	Data Entry Date				Jul-5-2022
	Days After First/Last Applic.				56, 56
	Trt-Eval Interval				56 DA-A
1	Xtendflex				0.0
	Untreated Check				
	Select Max	0.121	lb ai/a	A	
	nonionic surfactant	0.25	% v/v	A	
2	Xtendflex				94.3 a
	Engenia	0.47	lb ae/a	A	
	Roundup PowerMax 3	1.13	lb ae/a	A	
	Zidua SC	0.106	lb ai/a	A	
	Sentris = AEGOS	0.363	lb ai/a	A	
3	Enlist E3				0.0 c
	Untreated Check				
	Select Max	0.121	lb ai/a	A	
	nonionic surfactant	0.25	% v/v	A	
4	Enlist E3				69.4 b
	Enlist One	0.95	lb ae/a	A	
	Roundup PowerMax 3	1.13	lb ae/a	A	
	Zidua SC	0.106	lb ai/a	A	
	LSD P=.05				6.52
	Standard Deviation				3.32
	CV				6.45
	Grand Mean				51.50
	Levene's F^				0.32
	Levene's Prob(F)				0.736
	Rank X2				.
	P(Rank X2)				.
	Shapiro-Wilk^				0.9247
	P(Shapiro-Wilk)^				0.3974
	Skewness^				0.0936
	P(Skewness)^				0.9079
	Kurtosis^				0.1849
	P(Kurtosis)^				0.9063
	Replicate F				2.255
	Replicate Prob(F)				0.2242
	Treatment F				839.966
	Treatment Prob(F)				0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 4-7=3.6; 8=3
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
^Calculated from residual.

University of Maryland

Engenia vs Enlist Burndown for Glyphosate Resistant Marestail

Trial ID: Soy3a-22 Cooperator Trial ID:
Protocol ID: Soy3-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: BASF
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: Apr-22-2022
Initiation Date: Apr-29-2022
Completion Date: Jun-24-2022

Trial Location
City: Queenstown **Country:** United States
State/Prov.: Maryland
Postal Code: 21658

Latitude of LL Corner °: 38.896007 N
Longitude of LL Corner °: -76.138379 W

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
Organization: University of Maryland
E-mail: kvollmer@umd.edu
City: Queenstown **State/Prov:** MD **Postal Code:** 21658
Role: SPONSR sponsor
Sponsor: BASF

Crop Description
Crop 1: C GLXMA Glycine max Soybean
Entry Date: May-27-2022 **Stage Scale:** BBCH
Variety: P37T33E
Attributes: Enlist E3
Planting Date: May-27-2022 **Planting Rate:** 150000 S/A

Crop 2: C GLXMA Glycine max Soybean
Entry Date: May-27-2022 **Stage Scale:** BBCH
Variety: S39XF41
Attributes: XtendFlex/STS
Planting Date: May-27-2022 **Planting Rate:** 150000 S/A

Pest Description
Pest 1 Type: W **Code:** ERICA Erigeron canadensis **Entry Date:** May-2-2022
Common Name: mare's-tail **Stage Scale:** BBCH
Artificial Population: N no

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 60 FT
Treated Plot Area: 600.0 FT2
Replications: 4 **Treatments:** 4 **Plots:** 16 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: W-02
% Sand: 10.5 **% OM:** 2.1 **Texture:** SIL silt loam
% Silt: 66.8 **Soil Name:** Whitemarsh silt loam
% Clay: 22 **Fert. Level:** G good
pH: 6.3 **CEC:** 4.2
Soil Drainage: F fair

University of Maryland

Engenia vs Enlist Burndown for Glyphosate Resistant Marestail

Trial ID: Soy3a-22 Cooperator Trial ID:
Protocol ID: Soy3-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: BASF
Investigator (Creator): Kurt Vollmer

Application Description

	A
Application Date	Apr-29-2022
Appl. Start Time	3:35 PM
Appl. Stop Time	5:33 PM
Application Method	SPRAY
Application Timing	PREPLA
Application Placement	BROADC
Applied By	Vollmer, K.
Appl. Entry Date	May-2-2022
Air Temperature Start, Stop	62, 64 F
% Relative Humidity Start, Stop	21, 20
Wind Velocity+Dir. Start	10 MPH, SSE
Wind Velocity+Dir. Stop	10 MPH, WNW
Wet Leaves (Y/N)	N, no
Soil Moisture	DRY
% Cloud Cover	0
Next Moisture Occurred On	Aug-1-2022
Time to Next Moisture	3.0 DAY
Moisture 6 Hours after Appl.	0 IN
Moisture 1 Week after Appl.	0.9 IN

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale	GLXMA, BSOY
Crop 2 Code, BBCH Scale	GLXMA, BSOY

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale	ERICA, W, BBCH
Height Average	5 IN
Height Minimum, Maximum	3, 9
Density Average	48 m2
Density Minimum, Maximum	10, 14

Application Equipment

	A
Equipment Type	BACCAI
Operation Pressure	19 PSI
Nozzle Type	TTI
Nozzle Tip Size, Color	11002, yellow
Nozzle Spacing	18.0 IN
Nozzles/Row	6.0
Boom Length	6.0 FT
Boom Height	12.0 IN
Ground Speed	3 MPH
Carrier	WATER
Application Amount	15 GAL/AC
Mix Size	1.0 GAL
Propellant	COMCO2

Notes

Context	Date	By	Notes
STATUS	Apr-19-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-2-2022	Kurt Vollmer	Automatically added by ARM: Trial Status changed to: E: changed by (EMDVOK).
STATUS	May-2-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

University of Maryland

Engenia vs Enlist Burndown for Glyphosate Resistant Marestail

Trial ID: Soy3a-22 Cooperator Trial ID:
Protocol ID: Soy3-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: BASF
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	5*	6*	7*
	Pest Type				W, Weed	W, Weed		W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				ERICA	ERICA		ERICA	ERICA	ERICA	ERICA
	Pest Name				mare's-tail	mare's-tail		mare's-tail	mare's-tail	mare's-tail	mare's-tail
	Crop Type, Code						C, SECCW				
	Crop Name						Winter rye				
	Rating Date				May-5-2022	May-5-2022	May-5-2022	May-12-2022	May-19-2022	May-26-2022	Jun-10-2022
	Rating Type				CONTRO	DENSIT	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	/0.25m2, -, -	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				May-6-2022	May-6-2022	May-6-2022	May-16-2022	May-20-2022	May-26-2022	Jun-10-2022
	Days After First/Last Applic.				6, 6	6, 6	6, 6	13, 13	20, 20	27, 27	42, 42
	Trt-Eval Interval				6 DA-A	6 DA-A	6 DA-A	13 DA-A	20 DA-A	27 DA-A	42 DA-A
1	Xtendflex				0.0 b	5.9 -	0.0 b	0.0 c	0.0 b	0.0 b	0.0 c
	Untreated Check										
	Select Max	0.121	lb ai/a	A							
	nonionic surfactant	0.25	% v/v	A							
2	Xtendflex				84.5 a	1.5 -	50.0 a	90.0 a	96.8 a	98.0 a	97.0 a
	Engenia	0.47	lb ae/a	A							
	Roundup PowerMax 3	1.13	lb ae/a	A							
	Zidua SC	0.106	lb ai/a	A							
	Sentris = AEGOS	0.363	lb ai/a	A							
3	Enlist E3				1.4 b	5.0 -	25.0 ab	0.0 c	0.0 b	0.0 b	0.0 c
	Untreated Check										
	Select Max	0.121	lb ai/a	A							
	nonionic surfactant	0.25	% v/v	A							
4	Enlist E3				63.3 a	3.6 -	37.5 ab	79.3 b	92.6 a	93.1 a	76.9 b
	Enlist One	0.95	lb ae/a	A							
	Roundup PowerMax 3	1.13	lb ae/a	A							
	Zidua SC	0.106	lb ai/a	A							
	LSD P=.05				36.72	4.75	33.32	3.39	5.35	4.85	3.02
	Standard Deviation				22.52	2.97	20.83	2.08	3.28	2.98	1.85
	CV				57.16	74.3	74.07	5.21	7.41	6.65	4.49
	Grand Mean				39.40	4.00	28.13	39.87	44.27	44.73	41.20
	Levene's F^				0.351	0.164	3.00	0.866	0.325	1.397	1.823
	Levene's Prob(F)				0.789	0.919	0.073	0.488	0.808	0.296	0.201
	Rank X2				.	.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.	.
	Shapiro-Wilk^				0.8161*	0.9424	0.9228	0.9278	0.9449	0.9342	0.9687
	P(Shapiro-Wilk)^				0.006*	0.3798	0.1873	0.2528	0.4485	0.3146	0.8388
	Skewness^				-1.3897*	0.0389	-0.5312	0.1722	0.3171	-0.3329	0.3998
	P(Skewness)^				0.0466*	0.9504	0.4021	0.7907	0.6261	0.6092	0.5401
	Kurtosis^				3.2848*	-1.038	0.221	2.0604	-0.6561	1.5886	-0.1181
	P(Kurtosis)^				0.0183*	0.397	0.8552	0.1161	0.6022	0.2175	0.9249
	Replicate F				0.908	2.788	0.360	1.404	2.276	1.697	0.514
	Replicate Prob(F)				0.4788	0.1018	0.7834	0.3108	0.1567	0.2443	0.6841
	Treatment F				13.983	1.646	4.200	2121.049	1042.652	1292.048	2902.173
	Treatment Prob(F)				0.0015	0.2469	0.0408	0.0001	0.0001	0.0001	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 1,4-7=3.7; 8=3.2
* Adjusted means
^Calculated from residual.

University of Maryland

Engenia vs Enlist Burndown for Glyphosate Resistant Marestail

Trial ID: Soy3a-22 Cooperator Trial ID:
Protocol ID: Soy3-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: BASF
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	8*
	Pest Type				W, Weed
	Pest Code				ERICA
	Pest Name				mare's-tail
	Crop Type, Code				
	Crop Name				
	Rating Date				Jun-24-2022
	Rating Type				CONTRO
	Rating Unit/Min/Max				%, 0, 100
	Data Entry Date				Jul-5-2022
	Days After First/Last Applic.				56, 56
	Trt-Eval Interval				56 DA-A
1	Xtendflex				0.0 c
	Untreated Check				
	Select Max	0.121	lb ai/a	A	
	nonionic surfactant	0.25	% v/v	A	
2	Xtendflex				94.3 a
	Engenia	0.47	lb ae/a	A	
	Roundup PowerMax 3	1.13	lb ae/a	A	
	Zidua SC	0.106	lb ai/a	A	
	Sentris = AEGOS	0.363	lb ai/a	A	
3	Enlist E3				0.0 c
	Untreated Check				
	Select Max	0.121	lb ai/a	A	
	nonionic surfactant	0.25	% v/v	A	
4	Enlist E3				69.3 b
	Enlist One	0.95	lb ae/a	A	
	Roundup PowerMax 3	1.13	lb ae/a	A	
	Zidua SC	0.106	lb ai/a	A	
	LSD P=.05				5.01
	Standard Deviation				3.00
	CV				8.15
	Grand Mean				36.79
	Levene's F^				0.113
	Levene's Prob(F)				0.95
	Rank X2				.
	P(Rank X2)				.
	Shapiro-Wilk^				0.954
	P(Shapiro-Wilk)^				0.6238
	Skewness^				-0.2057
	P(Skewness)^				0.7602
	Kurtosis^				-0.1596
	P(Kurtosis)^				0.9023
	Replicate F				2.074
	Replicate Prob(F)				0.1923
	Treatment F				968.945
	Treatment Prob(F)				0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Due to missing data, the effective replicates used for mean comparisons are: col. 1,4-7=3.7; 8=3.2
* Adjusted means
^Calculated from residual.

University of Maryland

Engenia vs Enlist Burndown for Glyphosate Resistant Marestail

Trial ID: Soy3a-22 Cooperator Trial ID:
Protocol ID: Soy3-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: BASF
Investigator (Creator): Kurt Vollmer

Pest Type
W, Weed = Weed or volunteer crop
Pest Code
ERICA, Erigeron canadensis, mare's-tail = US
Crop Type, Code
C = EPPO species (Bayer) codes
SECCW, BCER, Secale cereale, Winter rye = US
Rating Type
CONTRO = control / burndown or knockdown
DENSIT = density
Rating Unit/Min/Max
%, 0, 100 = percent

University of Maryland

SC619 for Preplant Burndown and Soybean Safety

Trial ID: Soy4-22 Cooperator Trial ID:
Protocol ID: Soy4-22 Location: J-04 Trial Year: 2022
Project ID: HN22USAEOC Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Bayer
Investigator (Creator): Kurt Vollmer

Status: E established
ARM Trial Created On: Apr-27-2022
Initiation Date: May-17-2022
Completion Date: Jul-6-2022

Trial Location
City: Queenstown **Country:** USA United States
State/Prov.: Maryland
Postal Code: 21658 **Climate Zone:** EPPONE EPPO North East

Latitude of LL Corner °: 38.91558 N
Longitude of LL Corner °: -76.14528 W

Conducted Under GLP: No
Conducted Under GEP: No

Role: SPONSR sponsor
Sponsor: Bayer
Organization: Bayer

Crop Description
Crop 1: C GLXMA Glycine max Soybean
Entry Date: Jun-15-2022 **Stage Scale:** BBCH
Variety: S46XF31S
Attributes: XtendFlex/STS
Planting Date: Jun-1-2022 **Planting Rate:** 12200 S/A
Rows per Plot: 7 **Planting Method:** PLANTD planted
Row Spacing: 15 IN **Planting Equipment:** FE field equipment
Emergence Date: Jun-7-2022

Pest Description

Pest 1 Type: W **Code:** CHEAL Chenopodium album **Entry Date:** May-17-2022
Common Name: common lambsquarters **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 15

Pest 2 Type: W **Code:** ERICA Erigeron canadensis **Entry Date:** May-17-2022
Common Name: mare's-tail **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 35

Pest 3 Type: W **Code:** LAMAM Lamium amplexicaule **Entry Date:** May-17-2022
Common Name: Henbit deadnettle **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 67

Pest 4 Type: W **Code:** OXAST Oxalis stricta **Entry Date:** May-17-2022
Common Name: upright wood sorrel **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 67

Pest 5 Type: W **Code:** POAAN Poa annua **Entry Date:** May-17-2022
Common Name: Annual bluegrass **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 89

Pest 6 Type: W **Code:** STEME Stellaria media **Entry Date:** May-17-2022
Common Name: chickweed **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 71

Pest 7 Type: W **Code:** VERPE Veronica persica **Entry Date:** May-17-2022
Common Name: Bird's-eye speedwell **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 65

Pest 8 Type: W **Code:** VIORA Viola bicolor **Entry Date:** May-17-2022
Common Name: Johnny-jump-up violet **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 65

Pest 9 Type: W **Code:** SENVU Senecio vulgaris **Entry Date:** May-17-2022
Common Name: groundsel **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 65

University of Maryland

SC619 for Preplant Burndown and Soybean Safety

Trial ID: Soy4-22 Cooperator Trial ID:
Protocol ID: Soy4-22 Location: J-04 Trial Year: 2022
Project ID: HN22USAEOC Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Bayer
Investigator (Creator): Kurt Vollmer

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2
Replications: 4 **Treatments:** 14 **Plots:** 56 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: J-04
% Sand: 50.5 **% OM:** 2.3 **Texture:** SIL silt loam
% Silt: 36 **Soil Name:** Mattapex-Butlertown silt laom
% Clay: 12.9
pH: 6.2 **CEC:** 5.8

Application Description

	A	B	C
Application Date	May-17-2022	May-25-2022	Jun-1-2022
Appl. Start Time	11:00 AM	10:00 AM	8:45 AM
Appl. Stop Time	11:40 AM	11:00 AM	9:25 AM
Application Method	SPRAY	SPRAY	SPRAY
Application Timing	PREPLA	PREPLA	PREPLA
Application Placement	BROADC	BROADC	BROADC
Applied By	Vollmer, K.	Vollmer, K.	Vollmer, K.
Appl. Entry Date	May-17-2022	May-25-2022	Jun-1-2022
Air Temperature Start, Stop	73, 76 F	64, 67 F	81, 80 F
% Relative Humidity Start, Stop	45, 40	79, 70	78, 73
Wind Velocity+Dir. Start	10 MPH, ESE	8 MPH, SW	2 MPH, ESE
Wind Velocity+Dir. Stop	10 MPH, ESE	10 MPH, WSW	4 MPH, SE
Wind Velocity+Dir. Max	10 MPH, ESE	10 MPH, WSW	4 MPH, SE
Wet Leaves (Y/N)	N, no	N, no	N, no
Soil Moisture	SLIWET	SLIWET	SLIWET
% Cloud Cover	0	100	25
Next Moisture Occurred On	May-19-2022	May-27-2022	Jun-2-2022
Time to Next Moisture	2.0 DAY	2.0 DAY	1.0 DAY
Moisture 6 Hours after Appl.	0 IN	0 IN	0 IN
Moisture 1 Week after Appl.	0.86 IN	0 IN	2.04 IN

Comment:
5/17/2022: Only about 1/4 of plot 412 was sprayed due to an leaky bottle.

Crop Stage At Each Application

	A	B	C
Crop 1 Code, BBCH Scale	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY
Days after Emergence	-21	-13	-6

University of Maryland

SC619 for Preplant Burndown and Soybean Safety

Trial ID: Soy4-22 Cooperator Trial ID:
Protocol ID: Soy4-22 Location: J-04 Trial Year: 2022
Project ID: HN22USAEOC Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Bayer
Investigator (Creator): Kurt Vollmer

Pest Stage At Each Application

	A	B	C
Pest 1 Code, Type, Scale	CHEAL, W, BBCH	CHEAL, W, BBCH	CHEAL, W, BBCH
Height Average	7 IN		
Height Minimum, Maximum	5, 9		
Pest 2 Code, Type, Scale	ERICA, W, BBCH	ERICA, W, BBCH	ERICA, W, BBCH
Height Average	6 IN		
Height Minimum, Maximum	5, 8		
Pest 3 Code, Type, Scale	LAMAM, W, BBCH	LAMAM, W, BBCH	LAMAM, W, BBCH
Height Average	11 FT		
Height Minimum, Maximum	10, 12		
Pest 4 Code, Type, Scale	OXAST, W, BBCH	OXAST, W, BBCH	OXAST, W, BBCH
Height Average	5 IN		
Height Minimum, Maximum	3, 6		
Pest 5 Code, Type, Scale	POAAN, W, BBCH	POAAN, W, BBCH	POAAN, W, BBCH
Height Average	8 IN		
Height Minimum, Maximum	8, 8		
Pest 6 Code, Type, Scale	STEME, W, BBCH	STEME, W, BBCH	STEME, W, BBCH
Height Average	16 IN		
Height Minimum, Maximum	14, 16		
Pest 7 Code, Type, Scale	VERPE, W, BBCH	VERPE, W, BBCH	VERPE, W, BBCH
Height Average	10 IN		
Height Minimum, Maximum	8, 12		
Pest 8 Code, Type, Scale	VIORA, W, BBCH	VIORA, W, BBCH	VIORA, W, BBCH
Height Average	6 IN		
Height Minimum, Maximum	5, 6		
Pest 9 Code, Type, Scale	SENVU, W, BBCH	SENVU, W, BBCH	SENVU, W, BBCH
Height Average	20 IN		
Height Minimum, Maximum	18, 21		

Application Equipment

	A	B	C
Equipment Type	BACCAI	BACCAI	BACCAI
Operation Pressure	19 PSI	23 PSI	23 PSI
Nozzle Type	TEEJTU	FLAFAN	FLAFAN
Nozzle Tip Size, Color	11002, Yellow	8002, Yellow	8002, Yellow
Nozzle Spacing	18.0 IN	18.0 -	18.0 -
Nozzles/Row	6.0	6.0	6.0
Band Width	10.0 FT	10.0 FT	10.0 FT
Boom Length	6.0 FT	6.0 FT	6.0 FT
Boom Height	12.0 IN	12.0 IN	12.0 IN
Ground Speed	3 MPH	3 MPH	3 MPH
Application Amount	18 GAL/AC	15 GAL/AC	15 GAL/AC
Mix Size	2.0 L	2.0 L	2.0 L
Propellant	COMCO2	COMCO2	COMCO2

Equipment Comment: Turbo Teejet nozzles used for dicamba applications @ 19 PSI.

Notes

Context	Date	By	Notes
STATUS	Apr-27-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-17-2022	Kurt Vollmer	Automatically added by ARM: Trial Status changed to: E: changed by (EMDVOK).
STATUS	May-17-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

University of Maryland

SC619 for Preplant Burndown and Soybean Safety

Trial ID: Soy4-22 Cooperator Trial ID:
Protocol ID: Soy4-22 Location: J-04 Trial Year: 2022
Project ID: HN22USAEOC Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Bayer
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	6*	7*	9*
	Pest Type					W, Weed	W, Weed	W, Weed		W, Weed	
	Pest Code					CHEAL	ERICA	SETFA		ERICA	
	Pest Name					common lambsqua>	mare's-tail	Giant foxtail		mare's-tail	
	Crop Type, Code				C, GLXMA				C, GLXMA		C, GLXMA
	Crop Name				Soybean				Soybean		Soybean
	Rating Date				Jun-15-2022	Jun-15-2022	Jun-15-2022	Jun-15-2022	Jun-24-2022	Jun-24-2022	Jul-1-2022
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	PHYGEN
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jun-15-2022	Jun-15-2022	Jun-15-2022	Jun-15-2022	Jul-1-2022	Jul-1-2022	Jul-1-2022
	Days After First/Last Applic.				29, 14	29, 14	29, 14	29, 14	38, 23	38, 23	45, 30
	Days After Emergence				8 DE-1	8 DE-1	8 DE-1	8 DE-1	17 DE-1	17 DE-1	24 DE-1
1	untreated				0.0 -	0.0 b	0.0 c	0.0 b	0.0 -	0.0 c	0.0 -
4	Sharpen	0.0223	lb ai/a	A	0.0 -	48.8 a	0.0 c	88.8 a	0.0 -	7.5 c	0.0 -
	Roundup PowerMax 3	1.13	lb ae/a	A							
	N-Pak AMS	2.5	% v/v	A							
5	Fierce MTZ	0.413	lb ai/a	A	0.0 -	72.5 a	0.0 c	96.3 a	0.0 -	0.0 c	0.0 -
	Roundup PowerMax 3	1.13	lb ae/a	A							
	N-Pak AMS	2.5	% v/v	A							
8	Sharpen	0.0223	lb ai/a	B	0.0 -	100.0 a	23.8 c	87.5 a	0.0 -	52.5 b	0.0 -
	Roundup PowerMax 3	1.13	lb ae/a	B							
	N-Pak AMS	2.5	% v/v	B							
9	Fierce MTZ	0.413	lb ai/a	B	0.0 -	99.8 a	0.0 c	71.5 a	0.0 -	0.0 c	0.0 -
	Roundup PowerMax 3	1.13	lb ae/a	B							
	N-Pak AMS	2.5	% v/v	B							
12	Sharpen	0.0223	lb ai/a	C	0.0 -	100.0 a	62.5 b	100.0 a	0.0 -	58.8 b	0.0 -
	Roundup PowerMax 3	1.13	lb ae/a	C							
	N-Pak AMS	2.5	% v/v	C							
13	Fierce MTZ	0.413	lb ai/a	C	0.0 -	100.0 a	5.0 c	98.8 a	0.0 -	0.0 c	0.0 -
	Roundup PowerMax 3	1.13	lb ae/a	C							
	N-Pak AMS	2.5	% v/v	C							
14	Roundup PowerMax 3	1.13	lb ae/a	B	0.0 -	99.8 a	91.0 a	92.5 a	0.0 -	90.0 a	0.0 -
	Xtendimax Vaporgrip	0.5	lb ae/a	B							
	Intact DFR	0.5	% v/v	B							
	Vaporgrip Xtra	1.25	lb ai/a	B							
	Class Act Ridion	1	% v/v	B							
	LSD P=.05				.	36.89	17.16	30.18	.	15.43	.
	Standard Deviation				0.00	25.09	11.67	20.53	0.00	10.49	0.00
	CV				0.0	32.33	51.22	25.85	0.0	40.2	0.0
	Grand Mean				0.00	77.59	22.78	79.41	0.00	26.09	0.00
	Levene's F^				.	2.268	0.699	0.897	.	2.253	.
	Levene's Prob(F)				.	0.064	0.673	0.524	.	0.065	.
	Rank X2				.	.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.	.
	Shapiro-Wilk^				.	0.9162*	0.8212*	0.8094*	.	0.9032*	.
	P(Shapiro-Wilk)^				.	0.0164*	0.0001*	0.0*	.	0.0075*	.
	Skewness^				.	-0.6373	2.046*	-2.0771*	.	-0.5394	.
	P(Skewness)^				.	0.1517	0.0*	0.0*	.	0.2229	.
	Kurtosis^				.	1.404	6.6252*	7.5024*	.	3.7539*	.
	P(Kurtosis)^				.	0.1074	0.0*	0.0*	.	0.0001*	.
	Replicate F				0.000	1.788	0.691	0.336	0.000	0.762	0.000
	Replicate Prob(F)				1.0000	0.1804	0.5680	0.7992	1.0000	0.5280	1.0000
	Treatment F				0.000	8.503	36.191	10.543	0.000	46.299	0.000
	Treatment Prob(F)				1.0000	0.0001	0.0001	0.0001	1.0000	0.0001	1.0000

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,6,9 because error mean square = 0.
^Calculated from residual.

University of Maryland

SC619 for Preplant Burndown and Soybean Safety

Trial ID: Soy4-22 Cooperator Trial ID:
Protocol ID: Soy4-22 Location: J-04 Trial Year: 2022
Project ID: HN22USAEOC Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Bayer
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	10*	12*	13*
	Pest Type				W, Weed		W, Weed
	Pest Code				ERICA		ERICA
	Pest Name				mare's-tail		mare's-tail
	Crop Type, Code					C, GLXMA	
	Crop Name					Soybean	
	Rating Date				Jul-1-2022	Jul-6-2022	Jul-6-2022
	Rating Type				CONTRO	PHYGEN	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-1-2022	Jul-6-2022	Jul-6-2022
	Days After First/Last Applic.				45, 30	50, 35	50, 35
	Days After Emergence				24 DE-1	29 DE-1	29 DE-1
1	untreated				0.0 d	0.0 -	0.0 b
4	Sharpen	0.0223	lb ai/a	A	18.8 cd	0.0 -	3.8 b
	Roundup PowerMax 3	1.13	lb ae/a	A			
	N-Pak AMS	2.5	% v/v	A			
5	Fierce MTZ	0.413	lb ai/a	A	10.0 d	0.0 -	26.0 b
	Roundup PowerMax 3	1.13	lb ae/a	A			
	N-Pak AMS	2.5	% v/v	A			
8	Sharpen	0.0223	lb ai/a	B	28.8 c	0.0 -	31.3 b
	Roundup PowerMax 3	1.13	lb ae/a	B			
	N-Pak AMS	2.5	% v/v	B			
9	Fierce MTZ	0.413	lb ai/a	B	8.8 d	0.0 -	8.8 b
	Roundup PowerMax 3	1.13	lb ae/a	B			
	N-Pak AMS	2.5	% v/v	B			
12	Sharpen	0.0223	lb ai/a	C	69.5 b	0.0 -	25.0 b
	Roundup PowerMax 3	1.13	lb ae/a	C			
	N-Pak AMS	2.5	% v/v	C			
13	Fierce MTZ	0.413	lb ai/a	C	10.0 d	2.5 -	3.8 b
	Roundup PowerMax 3	1.13	lb ae/a	C			
	N-Pak AMS	2.5	% v/v	C			
14	Roundup PowerMax 3	1.13	lb ae/a	B	95.0 a	0.0 -	97.5 a
	Xtendimax Vaporgrip	0.5	lb ae/a	B			
	Intact DFR	0.5	% v/v	B			
	Vaporgrip Xtra	1.25	lb ai/a	B			
	Class Act Ridion	1	% v/v	B			
	LSD P=.05				13.37	2.60	31.84
	Standard Deviation				9.09	1.77	21.65
	CV				30.21	565.69	88.38
	Grand Mean				30.09	0.31	24.50
	Levene's F^				1.71	0.643	0.667
	Levene's Prob(F)				0.154	0.716	0.698
	Rank X2				.	.	.
	P(Rank X2)				.	.	.
	Shapiro-Wilk^				0.9575	0.5947*	0.8434*
	P(Shapiro-Wilk)^				0.2341	0.0*	0.0003*
	Skewness^				0.6267	2.7492*	1.7049*
	P(Skewness)^				0.1584	0.0*	0.0004*
	Kurtosis^				1.0484	13.5402*	4.4901*
	P(Kurtosis)^				0.225	0.0*	0.0*
	Replicate F				2.272	1.000	1.121
	Replicate Prob(F)				0.1098	0.4123	0.3630
	Treatment F				55.751	1.000	8.636
	Treatment Prob(F)				0.0001	0.4586	0.0001

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,6,9 because error mean square = 0.
^Calculated from residual.

University of Maryland

Evaluating Sharpen with HM-1038D for Burndown Weed Control

Trial ID: Soy5-22 Cooperator Trial ID:
Protocol ID: Soy5-22 Location: Wye Island Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: BASF
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
Status Date: May-4-2022 **Last Changed By:** Kurt Vollmer
ARM Trial Created On: Apr-19-2022
Initiation Date: May-3-2022
Completion Date: Jan-25-2023
Protocol Revision Date: Apr-19-2022

Trial Location
Address (Location): Wye Island
City: Queenstown **Country:** USA United States
State/Prov.: Maryland MD
Postal Code: 21658

Latitude of LL Corner °: 38.896449 N
Longitude of LL Corner °: -76.137991 W USAMD 39.723037 -37.889707
-75.049123 --79.487651
Time Zone: America/New_York

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
Organization: University of Maryland
E-mail: kvollmer@umd.edu
City: Queenstown **State/Prov:** MD **Postal Code:** 21658
Role: SPONSR sponsor
Sponsor: BASF

Crop Description
Crop 1: C GLXMA Glycine max Soybean **BBCH Scale:** BSOY
Entry Date: Aug-4-2022 **Stage Scale:** BBCH
Variety: P37T33E
Attributes: Enlist E3
Planting Date: May-27-2022 **Planting Rate:** 150000 S/A
Row Spacing: 15 IN

Pest Description
Pest 1 Type: W **Code:** ERICA Erigeron canadensis **Entry Date:** May-2-2022
Common Name: mare's-tail **Stage Scale:** BBCH
Artificial Population: N no

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2
Replications: 4 **Treatments:** 12 **Plots:** 48 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: W-02
% Sand: 20 **% OM:** 2.1 **Texture:** SIL silt loam
% Silt: 67 **Soil Name:** Mattapex-Butlertown silt loam
% Clay: 13 **Fert. Level:** G good
pH: 6.3 **CEC:** 4.2
Soil Drainage: F fair

University of Maryland

Evaluating Sharpen with HM-1038D for Burndown Weed Control

Trial ID: Soy5-22 Cooperator Trial ID:
Protocol ID: Soy5-22 Location: Wye Island Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: BASF
Investigator (Creator): Kurt Vollmer

Application Description

	A
Application Date	May-3-2022
Appl. Start Time	10:10 AM
Appl. Stop Time	11:40 AM
Application Method	SPRAY
Application Timing	PREPLA
Application Placement	BROADC
Applied By	Vollmer, K.
Appl. Entry Date	May-4-2022
Air Temperature Start, Stop	57, 61 F
% Relative Humidity Start, Stop	96, 85
Wind Velocity+Dir. Start	10 MPH, W
Wind Velocity+Dir. Stop	7 MPH, W
Wind Velocity+Dir. Max	10 MPH, W
Wet Leaves (Y/N)	N, no
Soil Moisture	DRY
% Cloud Cover	50
Next Moisture Occurred On	May-4-2022
Time to Next Moisture	24.0 HR
Moisture 6 Hours after Appl.	0 IN
Moisture 1 Week after Appl.	3.15 IN
Weather Source	WSLOCAL

Comment:
Application of Select Max (16 oz/A) + NIS applied 7 days before treatments.

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale	GLXMA, BSOY
Stage Scale Used	BBCH

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale	ERICA, W, BBCH
Height Average	5 IN
Height Minimum, Maximum	3, 9

Application Equipment

	A
Equipment Type	BACCAI
Operation Pressure	23 PSI
Nozzle Type	8002VS
Nozzle Tip Size, Color	-, Yellow
Nozzle Spacing	18.0 IN
Nozzles/Row	6.0
Boom Length	6.0 FT
Boom Height	12.0 IN
Ground Speed	3 MPH
Carrier	WATER
Application Amount	15 GAL/AC
Minimum Mix/Treatment	1.3035 L
Mix Size	2.0 -
Propellant	COMCO2

Notes

Context	Date	By	Notes
STATUS	Apr-19-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	May-4-2022	Kurt Vollmer	Automatically added by ARM: Trial Status changed to: E: changed by (EMDVOK).
STATUS	May-4-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

University of Maryland

Evaluating Sharpen with HM-1038D for Burndown Weed Control

Trial ID: Soy5-22 Cooperator Trial ID:
Protocol ID: Soy5-22 Location: Wye Island Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: BASF
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	5*	6*
	Pest Type				W, Weed	W, Weed	W, Weed		W, Weed	W, Weed
	Pest Code				ERICA	ERICA	ERICA		ERICA	ERICA
	Pest Name				mare's-tail	mare's-tail	mare's-tail		mare's-tail	mare's-tail
	Crop Type, Code							C, SECCE		
	Crop Name							Rye		
	Rating Date				May-5-2022	May-5-2022	May-10-2022	May-10-2022	May-17-2022	May-25-2022
	Rating Type				CONTRO	DENSIT	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	0.25/m2, -, -	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				May-6-2022	May-6-2022	May-11-2022	May-11-2022	May-18-2022	May-26-2022
	Days After First/Last Applic.				2, 2	2, 2	7, 7	7, 7	14, 14	22, 22
	Trt-Eval Interval				2 DA-A	2 DA-A	7 DA-A	7 DA-A	14 DA-A	22 DA-A
1	untreated				0.0	11.5	0.0	0.0	0.0	0.0
2	Sharpen	0.0111	lb ai/a	A	64.5 -	5.6 -	86.3 -	92.5 -	28.8 b	35.0 b
	Roundup PowerMax 3	0.56	lb ae/a	A						
3	Sharpen	0.0111	lb ai/a	A	63.3 -	6.3 -	84.3 -	92.5 -	38.8 b	45.5 ab
	Roundup PowerMax 3	0.56	lb ae/a	A						
	ammonium sulfate	8.5	lb/100 gal	A						
4	Sharpen	0.0111	lb ai/a	A	65.0 -	8.0 -	92.3 -	93.8 -	84.8 a	61.3 ab
	Roundup PowerMax 3	0.56	lb ae/a	A						
	HM-1038D	0.5	% v/v	A						
5	Sharpen	0.0111	lb ai/a	A	63.8 -	3.3 -	93.8 -	93.8 -	40.0 b	51.3 ab
	Roundup PowerMax 3	0.56	lb ae/a	A						
	ammonium sulfate	8.5	lb/100 gal	A						
	HM-1038D	0.5	% v/v	A						
6	Sharpen	0.0111	lb ai/a	A	66.3 -	5.4 -	91.0 -	93.8 -	90.8 a	75.0 ab
	Roundup PowerMax 3	0.56	lb ae/a	A						
	HM-1038D	0.75	% v/v	A						
7	Sharpen	0.0111	lb ai/a	A	65.0 -	3.8 -	93.0 -	95.0 -	67.5 a	61.3 ab
	Roundup PowerMax 3	0.56	lb ae/a	A						
	ammonium sulfate	8.5	lb/100 gal	A						
	HM-1038D	0.75	% v/v	A						
8	Sharpen	0.0111	lb ai/a	A	65.0 -	5.9 -	96.3 -	95.0 -	96.5 a	83.3 a
	Roundup PowerMax 3	0.56	lb ae/a	A						
	Firezone	1	% v/v	A						
9	Sharpen	0.0111	lb ai/a	A	65.5 -	7.0 -	90.8 -	95.0 -	92.0 a	82.0 a
	Roundup PowerMax 3	0.56	lb ae/a	A						
	ammonium sulfate	8.5	lb/100 gal	A						
	Firezone	1	% v/v	A						
10	Sharpen	0.0111	lb ai/a	A	65.0 -	4.1 -	90.8 -	92.5 -	81.0 a	70.0 ab
	Roundup PowerMax 3	0.56	lb ae/a	A						
	methylated seed oil	1	% v/v	A						
11	Sharpen	0.0111	lb ai/a	A	65.0 -	6.9 -	91.5 -	95.0 -	83.3 a	68.0 ab
	Roundup PowerMax 3	0.56	lb ae/a	A						
	ammonium sulfate	8.5	lb/100 gal	A						
	methylated seed oil	1	% v/v	A						
12	Sharpen	0.0111	lb ai/a	A	65.0 -	3.4 -	92.8 -	93.8 -	93.0 a	72.5 ab
	Roundup PowerMax 3	0.56	lb ae/a	A						
	ammonium sulfate	8.5	lb/100 gal	A						
	Destiny HC	0.75	% v/v	A						
	LSD P=.05				1.98	5.39	10.51	4.03	18.87	25.65
	Standard Deviation				1.37	3.74	7.28	2.79	13.07	17.76
	CV				2.11	69.07	7.99	2.98	18.05	27.71
	Grand Mean				64.84	5.41	91.14	93.86	72.39	64.09
	Levene's F^				1.067	1.567	0.68	0.559	1.043	1.464
	Levene's Prob(F)				0.413	0.16	0.735	0.835	0.431	0.197
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				0.883*	0.9701	0.9436*	0.8945*	0.9535	0.9631
	P(Shapiro-Wilk)^				0.0003*	0.3054	0.032*	0.0007*	0.0743	0.1701
	Skewness^				-0.4182	-0.2605	-0.7035	-1.2988*	0.9498*	-0.5614
	P(Skewness)^				0.264	0.4847	0.0637	0.0011*	0.0137*	0.136
	Kurtosis^				4.5184*	-0.4284	0.2885	2.6168*	2.345*	0.3494
	P(Kurtosis)^				0.0*	0.5579	0.6928	0.0008*	0.0024*	0.6325
	Replicate F				0.724	1.306	0.847	2.816	2.128	5.009
	Replicate Prob(F)				0.5456	0.2907	0.4793	0.0560	0.1175	0.0062
	Treatment F				1.369	0.733	0.845	0.553	14.483	2.917
	Treatment Prob(F)				0.2416	0.6884	0.5907	0.8377	0.0001	0.0113

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
^Calculated from residual.

University of Maryland

Preview 2.1 for Weed Control in Soybean

Trial ID: Soy6-22 Cooperator Trial ID:
Protocol ID: Soy6-22 Location: Wye Island Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: UPL
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: May-31-2022
Initiation Date: Jun-9-2022
Completion Date: Nov-21-2022

Trial Location
City: Queenstown **Country:** USA
State/Prov.: Maryland
Postal Code: 21658

Latitude of LL Corner °: 38.897202 N
Longitude of LL Corner °: -76.137462 W

Conducted Under GLP: No
Conducted Under GEP: No

Objectives:

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
Organization: University of Maryland
E-mail: kvollmer@umd.edu
City: Queenstown **State/Prov:** MD **Postal Code:** 21658
Role: SPONSR sponsor
Sponsor: UPL

Crop Description
Crop 1: C GLXMA Glycine max Soybean
Entry Date: Jun-10-2022 **Stage Scale:** BBCH
Variety: P46T27SE
Attributes: Enlist E3
Planting Date: Jun-9-2022 **Planting Rate:** 140000 S/A
Rows per Plot: 7 **Planting Method:** PLANTD planted
Row Spacing: 15 IN **Planting Equipment:** FE field equipment
Emergence Date: Jun-15-2022
Harvest Date: Nov-21-2022 **Harvest Equipment:** ALMACO small plot combine
Harvested Width: 5 FT
% Standard Moisture: 11.8 **Harvested Length:** 25 FT

Pest Description
Pest 1 Type: W **Code:** ERICA Erigeron canadensis **Entry Date:** Aug-11-2022
Common Name: mare's-tail **Stage Scale:** BBCH

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2
Replications: 4 **Treatments:** 6 **Plots:** 24 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: W-02
% Sand: 20 **% OM:** 2.1 **Texture:** SIL silt loam
% Silt: 67 **Soil Name:** Mattapex-Butlertown silt loam
% Clay: 13 **Fert. Level:** G good
pH: 6.3 **CEC:** 4.2
Comment:

University of Maryland

Preview 2.1 for Weed Control in Soybean

Trial ID: Soy6-22 Cooperator Trial ID:
Protocol ID: Soy6-22 Location: Wye Island Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: UPL
Investigator (Creator): Kurt Vollmer

Application Description

	A	B
Application Date	Jun-10-2022	Jul-11-2022
Appl. Start Time	10:00 AM	9:10 AM
Appl. Stop Time	11:40 AM	9:35 AM
Application Method	SPRAY	SPRAY
Application Timing	PREPRE	POSPOS
Application Placement	BROSOI	BROFOL
Applied By	Vollmer, K.	Vollmer, K.
Appl. Entry Date	Jun-10-2022	Aug-11-2022
Air Temperature Start, Stop	72, 74 F	72, 75 F
% Relative Humidity Start, Stop	57, 54	77, 65
Wind Velocity+Dir. Start	7 MPH, E	1 MPH, SW
Wind Velocity+Dir. Stop	7 MPH, E	1 MPH, NE
Wind Velocity+Dir. Max	7 MPH, E	1 MPH, -
Wet Leaves (Y/N)	N, no	N, no
Soil Moisture	DRY	SLIWET
% Cloud Cover	65	0
Next Moisture Occurred On	Jun-11-2022	Jul-12-2022
Time to Next Moisture	24.0 HR	24.0 HR
Moisture 6 Hours after Appl.	0 IN	0 IN
Moisture 1 Week after Appl.	2.03 IN	1.12 IN
Problems with Application?	N, no	N, no

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale	GLXMA, BSOY	GLXMA, BSOY
Days after Emergence	-5	26
Stage Majority, Percent	00, 100	V4-V6, 100
Height Average		9 IN
Height Minimum, Maximum		9, 9

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	ERICA, W, BBCH	ERICA, W, BBCH
Height Average		7.5 IN
Height Minimum, Maximum		2, 14

Application Equipment

	A	B
Equipment Type	BACCAI	BACCAI
Operation Pressure	14 PSI	19 PSI
Nozzle Type	FLAFAN	
Nozzle Tip Size, Color	8003, Blue	11002, Yellow
Nozzle Spacing	20 m	18.0 -
Nozzles/Row	6.0	6.0
Boom Length	10.0 FT	6.0 FT
Boom Height	12.0 IN	12.0 IN
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Application Amount	15 GAL/AC	15 GAL/AC
Mix Size	2.0 L	2.0 L
Propellant	COMCO2	COMCO2

Notes

Context	Date	By	Notes
STATUS	May-31-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Jun-10-2022	Kurt Vollmer	Automatically added by ARM: Trial Status changed to: E: changed by (EMDVOK).
STATUS	Jun-10-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Planting Date entered.

University of Maryland

Preview 2.1 for Weed Control in Soybean

Trial ID: Soy6-22 Cooperator Trial ID:
Protocol ID: Soy6-22 Location: Wye Island Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: UPL
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	5*	6*	7*	10*
	Pest Type								W, Weed	W, Weed	
	Pest Code								AMACH	ERICA	
	Pest Name								smooth pigweed	mare's-tail	
	Crop Type, Code				C, GLXMA	C, GLXMA	C, GLXMA	C, GLXMA			C, GLXMA
	Crop Name				Soybean	Soybean	Soybean	Soybean			Soybean
	Rating Date				Jun-24-2022	Jun-24-2022	Jul-7-2022	Jul-26-2022	Jul-26-2022	Jul-26-2022	Nov-21-2022
	Rating Type				PHYGEN	HEIGHT	PHYGEN	PHYGEN	CONTRO	CONTRO	YIELD
	Rating Unit/Min/Max				%, 0, 100	IN, -, -	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	BU, -, -
	Data Entry Date				Jul-5-2022	Jul-5-2022	Jul-8-2022	Jul-26-2022	Jul-26-2022	Jul-26-2022	
	Days After First/Last Applic.				14, 14	14, 14	27, 27	46, 15	46, 15	46, 15	164, 133
	Trt-Eval Interval				14 DA-A	14 DA-A	27 DA-A	46 DA-A	46 DA-A	46 DA-A	
	Days After Emergence				9 DE-1	9 DE-1	22 DE-1	41 DE-1	41 DE-1	41 DE-1	159 DE-1
	ARM Action Codes										TY1
1					0.0	4.275	0.0	0.0	0.0	25.0	47.7 -
2	Preview 2.1	0.654	lb ai/a	A	0.0 -	3.046 -	0.0 -	0.0 -	100.0 -	100.0 -	43.6 -
	InterMoc	1.79	lb ai/a	B							
	Roundup PowerMax	1.13	lb ae/a	B							
	ammonium sulfate	2.55	lb/a	B							
3	Preview 2.1	0.654	lb ai/a	A	0.0 -	3.433 -	0.0 -	1.3 -	100.0 -	100.0 -	44.6 -
	Interline	0.53	lb ai/a	B							
	Enlist One	0.95	lb ae/a	B							
	Roundup PowerMax	1.13	lb ae/a	B							
	ammonium sulfate	2.55	lb/a	B							
4	Valor EZ	0.078	lb ai/a	A	0.0 -	5.171 -	0.0 -	0.0 -	100.0 -	100.0 -	40.7 -
	Mauler	0.25	lb ai/a	A							
	Enlist One	0.95	lb ae/a	B							
	Roundup PowerMax	1.13	lb ae/a	B							
	ammonium sulfate	2.55	lb/a	B							
5	Valor EZ	0.078	lb ai/a	A	0.0 -	3.650 -	0.0 -	0.0 -	100.0 -	100.0 -	36.7 -
	Mauler	0.25	lb ai/a	A							
	Liberty 280	0.53	lb ai/a	B							
	ammonium sulfate	2.55	lb/a	B							
6	Fierce XLT	0.195	lb ai/a	A	0.0 -	3.738 -	0.0 -	0.0 -	100.0 -	75.0 -	44.4 -
	Mauler	0.25	lb ai/a	A							
	Roundup PowerMax	1.13	lb ae/a	B							
	ammonium sulfate	2.55	lb/a	B							
	LSD P=.05				.	2.0154	.	1.72	.	34.45	9.20
	Standard Deviation				0.00	1.3081	0.00	1.12	0.00	22.36	6.11
	CV				0.0	34.36	0.0	447.21	0.0	23.54	14.23
	Grand Mean				0.00	3.8075	0.00	0.25	100.00	95.00	42.93
	Levene's F^				.	0.44	.	0.45	.	0.45	1.636
	Levene's Prob(F)				.	0.778	.	0.771	.	0.771	0.201
	Rank X2				.	.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.	.
	Shapiro-Wilk^				.	0.8612*	.	0.6943*	.	0.6943*	0.9829
	P(Shapiro-Wilk)^				.	0.0082*	.	0.0*	.	0.0*	0.9428
	Skewness^				.	1.6691*	.	1.8758*	.	-1.8758*	0.1996
	P(Skewness)^				.	0.0068*	.	0.0029*	.	0.0029*	0.6942
	Kurtosis^				.	4.8488*	.	6.3489*	.	6.3489*	-0.2064
	P(Kurtosis)^				.	0.0002*	.	0.0*	.	0.0*	0.8341
	Replicate F				0.000	1.722	0.000	1.000	0.000	1.000	0.728
	Replicate Prob(F)				1.0000	0.2156	1.0000	0.4262	1.0000	0.4262	0.5508
	Treatment F				0.000	1.524	0.000	1.000	0.000	1.000	1.547
	Treatment Prob(F)				1.0000	0.2568	1.0000	0.4449	1.0000	0.4449	0.2345

Pest Type
W, Weed = Weed or volunteer crop
Pest Code
AMACH, Amaranthus hybridus, smooth pigweed = US
ERICA, Erigeron canadensis, mare's-tail = US
Crop Type, Code
C = EPPO species (Bayer) codes
GLXMA, BSOY, Glycine max, Soybean = US
Rating Type
PHYGEN = phytotoxicity - general / injury
HEIGHT = height
CONTRO = control / burndown or knockdown
YIELD = yield
Rating Unit/Min/Max

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,3,6 because error mean square = 0.
^Calculated from residual.

University of Maryland

Postemergence Weed Control with AMVAC Soybean Herbicides

Trial ID: Soy7-22_2 Cooperator Trial ID:
Protocol ID: Soy7-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: Jun-7-2022
Initiation Date: Jun-1-2022
Completion Date: Aug-4-2022

Trial Location
City: Queenstown **Country:** United States
State/Prov.: Maryland
Postal Code: 21658

Latitude of LL Corner °: 38.914423 N
Longitude of LL Corner °: -76.147249 W

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
E-mail: kvollmer@umd.edu
City: Queenstown **State/Prov:** MD **Postal Code:** 21658
Role: SPONSR sponsor
Sponsor: AMVAC

Crop Description
Crop 1: C GLXMA Glycine max Soybean
Entry Date: Aug-11-2022 **Stage Scale:** BBCH
Variety: S46XF31S
Attributes: XtendFlex/STS
Planting Date: Jun-1-2022 **Planting Rate:** 12200 S/A
Rows per Plot: 7 **Planting Method:** PLANTD planted
Row Spacing: 15 IN **Planting Equipment:** FE field equipment
Emergence Date: Jun-7-2022

Pest Description
Pest 1 Type: W **Code:** ABUTH Abutilon theophrasti **Entry Date:** Jun-20-2022
Common Name: velvetleaf **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 14

Pest 2 Type: W **Code:** CHEAL Chenopodium album **Entry Date:** Jun-20-2022
Common Name: common lambsquarters **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 14

Pest 3 Type: W **Code:** IPOSS Ipomoea sp. **Entry Date:** Jun-20-2022
Common Name: Morning glory **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 18

Pest 4 Type: W **Code:** SETFA Setaria faberi **Entry Date:** Jun-20-2022
Common Name: Giant foxtail **Stage Scale:** BBCH
Artificial Population: N no
Stage at Establishment: 13

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2
Replications: 4 **Treatments:** 6 **Plots:** 24 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: J-04
% Sand: 20 **% OM:** 2.3 **Texture:** SIL silt loam
% Silt: 67 **Soil Name:** Mattapex-Butlertown silt loam
% Clay: 13
pH: 6.2 **CEC:** 5.8

University of Maryland

Postemergence Weed Control with AMVAC Soybean Herbicides

Trial ID: Soy7-22_2 Cooperator Trial ID:
Protocol ID: Soy7-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator (Creator): Kurt Vollmer

Application Description

	A
Application Date	Jun-20-2022
Appl. Start Time	9:30 AM
Appl. Stop Time	10:30 AM
Application Method	SPRAY
Application Timing	POSPOS
Application Placement	BROADC
Applied By	Vollmer, K.
Appl. Entry Date	Jun-20-2022
Air Temperature Start, Stop	69, 70 F
% Relative Humidity Start, Stop	47, 40
Wind Velocity+Dir. Start	7 MPH, SE
Wind Velocity+Dir. Stop	7 MPH, SE
Wind Velocity+Dir. Max	7 MPH, SE
Wet Leaves (Y/N)	N, no
Soil Moisture	DRY
% Cloud Cover	75
Next Moisture Occurred On	Jun-22-2022
Time to Next Moisture	48.0 HR
Moisture 6 Hours after Appl.	0 IN
Moisture 1 Week after Appl.	1.88 IN

Comment:

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale	GLXMA, BSOY
Days after Emergence	13
Stage Majority, Percent	V2, -
Stage Minimum, Percent	V1, 25
Stage Maximum, Percent	V2, 75
Height Average	3.7 IN
Height Minimum, Maximum	3, 4

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale	ABUTH, W, BBCH
Height Average	1.7 IN
Height Minimum, Maximum	2, 3
Pest 2 Code, Type, Scale	CHEAL, W, BBCH
Height Average	1.7 IN
Height Minimum, Maximum	1.5, 2.5
Pest 3 Code, Type, Scale	IPOSS, W, BBCH
Height Average	3 IN
Height Minimum, Maximum	2, 4
Pest 4 Code, Type, Scale	SETFA, W, BBCH
Height Average	3.5 IN
Height Minimum, Maximum	3, 4

Application Equipment

	A
Equipment Type	BACCAI
Operation Pressure	19 PSI
Nozzle Type	TEEJAI
Nozzle Tip Size, Color	11002, Yellow
Nozzle Spacing	18.0 -
Nozzles/Row	6.0
Band Width	10.0 FT
Boom Height	12.0 IN
Ground Speed	3 MPH
Carrier	WATER
Mix Size	2.0 L
Propellant	COMCO2

University of Maryland

Postemergence Weed Control with AMVAC Soybean Herbicides

Trial ID: Soy7-22_2 Cooperator Trial ID:
Protocol ID: Soy7-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	6*	7*	8*
	Pest Type					W, Weed	W, Weed	W, Weed		W, Weed	W, Weed
	Pest Code					ABUTH	IPOSS	SETFA		ABUTH	AMACH
	Pest Name					velvetleaf	Morning glory	Giant foxtail		velvetleaf	smooth pigweed
	Crop Type, Code				C, GLXMA				C, GLXMA		
	Crop Name				Soybean				Soybean		
	Rating Date					Jul-1-2022	Jul-1-2022	Jul-1-2022	Jul-8-2022	Jul-8-2022	Jul-8-2022
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-1-2022	Jul-1-2022	Jul-1-2022	Jul-1-2022	Jul-8-2022	Jul-8-2022	Jul-8-2022
	Days After First/Last Applic.					11, 11	11, 11	11, 11	18, 18	18, 18	18, 18
	Trt-Eval Interval					11 DA-A	11 DA-A	11 DA-A	18 DA-A	18 DA-A	18 DA-A
	Days After Emergence					24 DE-1	24 DE-1	24 DE-1	31 DE-1	31 DE-1	31 DE-1
1	untreated				0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Engenia	0.5	lb ae/a	A	0.0 -	78.8 -	80.8 -	75.8 a	0.0 -	82.5 -	100.0 -
	Assure II	0.0825	lb ai/a	A							
	nonionic surfactant	0.25	% v/v	A							
	Reign LC	0.27	fl oz/a	A							
	Delta Locke	26	fl oz/a	A							
3	Engenia	0.5	lb ae/a	A	0.0 -	85.5 -	93.0 -	40.5 a	0.0 -	90.5 -	100.0 -
	Firstrate	0.021	lb ai/a	A							
	nonionic surfactant	0.25	% v/v	A							
	Reign LC	0.27	fl oz/a	A							
	Delta Locke	26	fl oz/a	A							
4	Engenia	0.5	lb ae/a	A	0.0 -	76.3 -	82.5 -	62.5 a	0.0 -	100.0 -	100.0 -
	Classic	0.0078	lb ai/a	A							
	nonionic surfactant	0.25	% v/v	A							
	Reign LC	0.27	fl oz/a	A							
	Delta Locke	26	fl oz/a	A							
5	Engenia	0.5	lb ae/a	A	0.0 -	100.0 -	86.3 -	7.5 b	0.0 -	100.0 -	100.0 -
	Python	0.00625	lb ai/a	A							
	nonionic surfactant	0.25	% v/v	A							
	Reign LC	0.27	fl oz/a	A							
	Delta Locke	26	fl oz/a	A							
6	Engenia	0.5	lb ae/a	A	0.0 -	87.5 -	83.3 -	73.3 a	0.0 -	100.0 -	97.5 -
	Scepter	0.092	lb ai/a	A							
	nonionic surfactant	0.25	% v/v	A							
	Reign LC	0.27	fl oz/a	A							
	Delta Locke	26	fl oz/a	A							
	LSD P=.05				.	24.02	12.70	30.95	.	15.68	3.45
	Standard Deviation				0.00	15.59	8.25	20.09	0.00	10.18	2.24
	CV				0.0	18.22	9.68	38.71	0.0	10.76	2.25
	Grand Mean				0.00	85.60	85.15	51.90	0.00	94.60	99.50
	Levene's F^				.	0.908	2.655	8.179*	.	9.702*	0.45
	Levene's Prob(F)				.	0.484	0.074	0.001*	.	0.00*	0.771
	Rank X2				.	.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.	.
	Shapiro-Wilk^				.	0.9591	0.9636	0.9817	.	0.9769	0.6943*
	P(Shapiro-Wilk)^				.	0.5267	0.6177	0.9546	.	0.8878	0.0*
	Skewness^				.	-0.6392	0.0862	0.1394	.	0.0499	-1.8758*
	P(Skewness)^				.	0.2594	0.8771	0.8026	.	0.9286	0.0029*
	Kurtosis^				.	1.3127	-0.9247	0.5737	.	-0.5333	6.3489*
	P(Kurtosis)^				.	0.2329	0.3962	0.5965	.	0.6224	0.0*
	Replicate F				0.000	1.189	2.007	1.333	0.000	1.338	1.000
	Replicate Prob(F)				1.0000	0.3551	0.1668	0.3097	1.0000	0.3082	0.4262
	Treatment F				0.000	1.420	1.365	8.024	0.000	2.421	1.000
	Treatment Prob(F)				1.0000	0.2862	0.3031	0.0022	1.0000	0.1056	0.4449

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,6,9 because error mean square = 0.
^Calculated from residual.

University of Maryland

Postemergence Weed Control with AMVAC Soybean Herbicides

Trial ID: Soy7-22_2 Cooperator Trial ID:
Protocol ID: Soy7-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	9*	10*	11*	13*	14*	15*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				CHEAL	IPOSS	SETFA	ABUTH	CHEAL	IPOSS
	Pest Name				common lambsqua>	Morning glory	Giant foxtail	velvetleaf	common lambsqua>	Morning glory
	Crop Type, Code									
	Crop Name									
	Rating Date				Jun-1-2022	Jul-8-2022	Jul-8-2022	Aug-4-2022	Aug-4-2022	Aug-4-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Jul-8-2022	Jul-8-2022	Jul-8-2022	Aug-4-2022	Aug-4-2022	Aug-4-2022
	Days After First/Last Applic.				-19, -19	18, 18	18, 18	45, 45	45, 45	45, 45
	Trt-Eval Interval				-19 DA-A	18 DA-A	18 DA-A	45 DA-A	45 DA-A	45 DA-A
	Days After Emergence				-6 DE-1	31 DE-1	31 DE-1	58 DE-1	58 DE-1	58 DE-1
1	untreated				0.0	0.0	0.0	0.0	0.0	0.0
2	Engenia	0.5	lb ae/a	A	100.0 -	98.8 -	45.5 -	55.0 -	100.0 -	97.5 -
	Assure II	0.0825	lb ai/a	A						
	nonionic surfactant	0.25	% v/v	A						
	Reign LC	0.27	fl oz/a	A						
	Delta Locke	26	fl oz/a	A						
3	Engenia	0.5	lb ae/a	A	100.0 -	98.3 -	42.5 -	75.0 -	75.0 -	75.0 -
	Firstrate	0.021	lb ai/a	A						
	nonionic surfactant	0.25	% v/v	A						
	Reign LC	0.27	fl oz/a	A						
	Delta Locke	26	fl oz/a	A						
4	Engenia	0.5	lb ae/a	A	100.0 -	98.8 -	54.3 -	100.0 -	100.0 -	100.0 -
	Classic	0.0078	lb ai/a	A						
	nonionic surfactant	0.25	% v/v	A						
	Reign LC	0.27	fl oz/a	A						
	Delta Locke	26	fl oz/a	A						
5	Engenia	0.5	lb ae/a	A	100.0 -	100.0 -	30.0 -	100.0 -	100.0 -	100.0 -
	Python	0.00625	lb ai/a	A						
	nonionic surfactant	0.25	% v/v	A						
	Reign LC	0.27	fl oz/a	A						
	Delta Locke	26	fl oz/a	A						
6	Engenia	0.5	lb ae/a	A	100.0 -	98.8 -	73.0 -	92.5 -	100.0 -	100.0 -
	Scepter	0.092	lb ai/a	A						
	nonionic surfactant	0.25	% v/v	A						
	Reign LC	0.27	fl oz/a	A						
	Delta Locke	26	fl oz/a	A						
	LSD P=.05				.	3.68	32.44	50.36	34.45	34.91
	Standard Deviation				0.00	2.39	21.06	32.69	22.36	22.66
	CV				0.0	2.41	42.93	38.68	23.54	23.98
	Grand Mean				100.00	98.90	49.05	84.50	95.00	94.50
	Levene's F^				.	0.081	1.59	1.033	0.45	0.453
	Levene's Prob(F)				.	0.987	0.228	0.422	0.771	0.769
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				.	0.926	0.9757	0.8921*	0.6943*	0.7502*
	P(Shapiro-Wilk)^				.	0.1295	0.868	0.0294*	0.0*	0.0002*
	Skewness^				.	-0.5145	0.1568	-1.069	-1.8758*	-1.8546*
	P(Skewness)^				.	0.3611	0.7786	0.0668	0.0029*	0.0032*
	Kurtosis^				.	-0.3427	0.143	2.6084*	6.3489*	6.1767*
	P(Kurtosis)^				.	0.7512	0.8947	0.0242*	0.0*	0.0*
	Replicate F				0.000	1.439	4.277	0.204	1.000	0.919
	Replicate Prob(F)				1.0000	0.2803	0.0285	0.8914	0.4262	0.4611
	Treatment F				0.000	0.298	2.298	1.409	1.000	0.935
	Treatment Prob(F)				1.0000	0.8735	0.1188	0.2896	0.4449	0.4763

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,6,9 because error mean square = 0.
^Calculated from residual.

University of Maryland

Postemergence Weed Control with AMVAC Soybean Herbicides

Trial ID: Soy7-22_2 Cooperator Trial ID:
Protocol ID: Soy7-22 Location: J-04 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: AMVAC
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	16*
	Pest Type				W, Weed
	Pest Code				SETPU
	Pest Name				yellow foxtail
	Crop Type, Code				
	Crop Name				
	Rating Date				Aug-4-2022
	Rating Type				CONTRO
	Rating Unit/Min/Max				%, 0, 100
	Data Entry Date				Aug-4-2022
	Days After First/Last Applic.				45, 45
	Trt-Eval Interval				45 DA-A
	Days After Emergence				58 DE-1
1	untreated				0.0
2	Engenia	0.5	lb ae/a	A	2.5 -
	Assure II	0.0825	lb ai/a	A	
	nonionic surfactant	0.25	% v/v	A	
	Reign LC	0.27	fl oz/a	A	
	Delta Locke	26	fl oz/a	A	
3	Engenia	0.5	lb ae/a	A	24.5 -
	Firstrate	0.021	lb ai/a	A	
	nonionic surfactant	0.25	% v/v	A	
	Reign LC	0.27	fl oz/a	A	
	Delta Locke	26	fl oz/a	A	
4	Engenia	0.5	lb ae/a	A	12.5 -
	Classic	0.0078	lb ai/a	A	
	nonionic surfactant	0.25	% v/v	A	
	Reign LC	0.27	fl oz/a	A	
	Delta Locke	26	fl oz/a	A	
5	Engenia	0.5	lb ae/a	A	26.3 -
	Python	0.00625	lb ai/a	A	
	nonionic surfactant	0.25	% v/v	A	
	Reign LC	0.27	fl oz/a	A	
	Delta Locke	26	fl oz/a	A	
6	Engenia	0.5	lb ae/a	A	28.8 -
	Scepter	0.092	lb ai/a	A	
	nonionic surfactant	0.25	% v/v	A	
	Reign LC	0.27	fl oz/a	A	
	Delta Locke	26	fl oz/a	A	
	LSD P=.05				32.57
	Standard Deviation				21.14
	CV				111.86
	Grand Mean				18.90
	Levene's F^				0.072
	Levene's Prob(F)				0.99
	Rank X2				.
	P(Rank X2)				.
	Shapiro-Wilk^				0.9632
	P(Shapiro-Wilk)^				0.6103
	Skewness^				-0.3467
	P(Skewness)^				0.5357
	Kurtosis^				-0.2205
	P(Kurtosis)^				0.8382
	Replicate F				6.366
	Replicate Prob(F)				0.0079
	Treatment F				1.101
	Treatment Prob(F)				0.3999

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,6,9 because error mean square = 0.
^Calculated from residual.

University of Maryland

Efficacy of Quelex and Pixarro Tank-mixes on Hard to Control Broadleaf Weeds

Trial ID: SG1-22 Cooperator Trial ID:
Protocol ID: SG1-22 Location: I-08 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Corteva
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: Mar-7-2022
Initiation Date: Nov-15-2021
Completion Date: Jan-12-2023

Trial Location
City: Queenstown **Country:** USA United States
State/Prov.: Maryland
Postal Code: 21658

Latitude of LL Corner °: 38.9149 N
Longitude of LL Corner °: -76.14834 W

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
Address 1: 124 Wye Narrows Drive
E-mail: kvollmer@umd.edu
City: Queenstown **State/Prov:** MD **Postal Code:** 21658
Role: SPONSR sponsor
Sponsor: Corteva

Crop Description
Crop 1: CTRZAW Triticum aestivum Winter wheat
Entry Date: Mar-28-2022 **Stage Scale:** BBCH
Variety: P25R74
Planting Date: Nov-15-2021 **Planting Rate:** 1700000 S/A

Pest Description
Pest 1 Type: W **Code:** LAMAM Lamium amplexicaule **Entry Date:** Mar-28-2022
Common Name: Henbit deadnettle **Stage Scale:** BBCH
Artificial Population: N no

Pest 2 Type: W **Code:** CERVU Cerastium fontanum vulgare **Entry Date:** Mar-28-2022
Common Name: common mouse-ear chickweed **Stage Scale:** BBCH
Artificial Population: N no

Pest 3 Type: W **Code:** VERPE Veronica persica **Entry Date:** Mar-28-2022
Common Name: Persian **Stage Scale:** BBCH
Artificial Population: N no

Pest 4 Type: W **Code:** ALLVI Allium vineale **Entry Date:** Mar-28-2022
Common Name: Field garlic **Stage Scale:** BBCH
Artificial Population: N no

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2
Replications: 4 **Treatments:** 14 **Plots:** 56 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: I-08
% Sand: 20 **% OM:** 2.4 **Texture:** SIL silt loam
% Silt: 67 **Soil Name:** Mattapex-Butlertown silt loam
% Clay: 13
pH: 6.2 **CEC:** 5.3

University of Maryland

Efficacy of Quelex and Pixarro Tank-mixes on Hard to Control Broadleaf Weeds

Trial ID: SG1-22 Cooperator Trial ID:
Protocol ID: SG1-22 Location: I-08 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Corteva
Investigator (Creator): Kurt Vollmer

Application Description

	A
Application Date	Mar-25-2022
Appl. Start Time	1:20 PM
Appl. Stop Time	2:00 PM
Application Method	SPRAY
Application Timing	POSPOS
Application Placement	BROFOL
Applied By	Vollmer, K.
Appl. Entry Date	Mar-28-2022
Air Temperature Start, Stop	59, 59 F
% Relative Humidity Start, Stop	46, 46
Wind Velocity+Dir. Start	9 MPH, E
Wind Velocity+Dir. Stop	9 MPH, E
Wind Velocity+Dir. Max	9 MPH, E
Wet Leaves (Y/N)	N, no
Soil Moisture	WET
% Cloud Cover	100

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale	TRZAW, BCER
Stage Majority, Percent	2, -
Stage Minimum, Percent	2, -
Stage Maximum, Percent	2, -
Height Average	6 IN

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale	LAMAM, W, BBCH
Stage Majority, Percent	67, -
Stage Minimum, Percent	67, -
Stage Maximum, Percent	67, -
Height Average	7 IN
Height Minimum, Maximum	6, 8
Pest 2 Code, Type, Scale	CERVU, W, BBCH
Height Average	4 IN
Height Minimum, Maximum	3, 5
Pest 3 Code, Type, Scale	VERPE, W, BBCH
Stage Majority, Percent	67, -
Stage Minimum, Percent	67, -
Stage Maximum, Percent	67, -
Height Average	4.75 IN
Height Minimum, Maximum	4, 5
Pest 4 Code, Type, Scale	ALLVI, W, BBCH
Height Average	7 IN
Height Minimum, Maximum	6, 8

Application Equipment

	A
Equipment Type	BACCAI
Operation Pressure	19 PSI
Nozzle Model	TT11002
Nozzle Type	TEEJTU
Nozzle Tip Size, Color	-, Yellow
Nozzle Spacing	18.0 IN
Nozzles/Row	6.0
Boom Length	6.0 FT
Boom Height	12.0 IN
Ground Speed	3 MPH
Carrier	WATER
Application Amount	15 GAL/AC
Mix Size	2.0 L
Propellant	COMCO2

University of Maryland

Efficacy of Quelex and Pixarro Tank-mixes on Hard to Control Broadleaf Weeds

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Protocol ID: SG1-22 Location: I-08 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Corteva
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	5*	6*
Pest Type							W, Weed	W, Weed	W, Weed	
Pest Code							CERVU	LAMAM	POAAN	
Pest Name							common mouse-ea>	Henbit deadnett>	Annual bluegrass	
Crop Type, Code					C, TRZAW	C, TRZAW				C, TRZAW
Crop Name					Winter wheat	Winter wheat				Winter wheat
Rating Date					Apr-1-2022	Apr-11-2022	Apr-11-2022	Apr-11-2022	Apr-11-2022	Apr-22-2022
Rating Type					PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN
Rating Unit/Min/Max					%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Data Entry Date					Apr-5-2022	Apr-11-2022	Apr-11-2022	Apr-11-2022	Apr-11-2022	Apr-27-2022
Days After First/Last Applic.					7, 7	17, 17	17, 17	17, 17	17, 17	28, 28
Trt-Eval Interval					7 DA-A	17 DA-A	17 DA-A	17 DA-A	17 DA-A	28 DA-A
1	untreated check				0.0	0.0	0.0	0.0	0.0	0.0
2	Quelex	0.0096	lb ai/a	A	0.0 b	0.0 b	27.5 b	66.3 c	0.0 b	1.3 -
	crop oil concentrate	1	% v/v	A						
3	Quelex	0.0096	lb ai/a	A	3.0 ab	0.0 b	30.0 b	88.5 a	0.0 b	6.0 -
	Harmony SG	0.0184	lb ai/a	A						
	Express	0.0094	lb ai/a	A						
	crop oil concentrate	1	% v/v	A						
4	Quelex	0.0096	lb ai/a	A	0.0 b	0.0 b	51.3 b	86.3 a	0.0 b	0.0 -
	Powerflex HL	0.0164	lb ai/a	A						
	crop oil concentrate	1	% v/v	A						
5	Quelex	0.0096	lb ai/a	A	7.5 ab	7.5 a	94.5 a	97.0 a	0.0 b	1.3 -
	Metribuzin 75	0.188	lb ai/a	A						
	crop oil concentrate	1	% v/v	A						
6	Pixxaro	0.114	lb ai/a	A	0.0 b	0.0 b	30.0 b	73.8 b	0.0 b	0.0 -
	crop oil concentrate	1	% v/v	A						
7	Pixxaro	0.114	lb ai/a	A	0.0 b	0.0 b	30.0 b	92.8 a	0.0 b	0.0 -
	Harmony SG	0.0184	lb ai/a	A						
	Express	0.0094	lb ai/a	A						
	crop oil concentrate	1	% v/v	A						
8	Pixxaro	0.114	lb ai/a	A	2.0 ab	0.0 b	38.8 b	94.0 a	0.0 b	6.5 -
	Powerflex HL	0.0164	lb ai/a	A						
	crop oil concentrate	1	% v/v	A						
9	Pixxaro	0.114	lb ai/a	A	10.0 a	9.3 a	95.0 a	98.0 a	7.5 a	2.0 -
	Metribuzin 75	0.188	lb ai/a	A						
	crop oil concentrate	1	% v/v	A						
10	Tarzec	0.02	lb ai/a	A	2.5 ab	0.0 b	31.3 b	88.5 a	0.0 b	2.5 -
	crop oil concentrate	1	% v/v	A						
11	Tarzec	0.02	lb ai/a	A	2.0 ab	0.0 b	30.0 b	89.0 a	0.0 b	2.5 -
	Harmony SG	0.0184	lb ai/a	A						
	Express	0.0094	lb ai/a	A						
	crop oil concentrate	1	% v/v	A						
12	Tarzec	0.02	lb ai/a	A	7.5 ab	10.0 a	92.8 a	95.8 a	5.0 ab	0.0 -
	Metribuzin 75	0.188	lb ai/a	A						
	crop oil concentrate	1	% v/v	A						
13	Harmony SG	0.0184	lb ai/a	A	2.5 ab	0.0 b	30.0 b	52.5 d	0.0 b	4.3 -
	Express	0.0094	lb ai/a	A						
	Starane Ultra	0.00875	lb ai/a	A						
	crop oil concentrate	1	% v/v	A						

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
^Calculated from residual.

University of Maryland

Efficacy of Quelex and Pixarro Tank-mixes on Hard to Control Broadleaf Weeds

Trial ID: SG1-22 Cooperator Trial ID:
Protocol ID: SG1-22 Location: I-08 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Corteva
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Unit	Appl Code	1*	2*	3*	4*	5*	6*
Pest Type							W, Weed	W, Weed	W, Weed	
Pest Code							CERVU	LAMAM	POAAN	
Pest Name							common mouse-ea>	Henbit deadnett>	Annual bluegrass	
Crop Type, Code					C, TRZAW	C, TRZAW				C, TRZAW
Crop Name					Winter wheat	Winter wheat				Winter wheat
Rating Date					Apr-1-2022	Apr-11-2022	Apr-11-2022	Apr-11-2022	Apr-11-2022	Apr-22-2022
Rating Type					PHYGEN	PHYGEN	CONTRO	CONTRO	CONTRO	PHYGEN
Rating Unit/Min/Max					%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Data Entry Date					Apr-5-2022	Apr-11-2022	Apr-11-2022	Apr-11-2022	Apr-11-2022	Apr-27-2022
Days After First/Last Applic.					7, 7	17, 17	17, 17	17, 17	17, 17	28, 28
Trt-Eval Interval					7 DA-A	17 DA-A	17 DA-A	17 DA-A	17 DA-A	28 DA-A
14	Harmony SG	0.0184	lb ai/a	A	0.0 b	1.3 b	73.3 a	87.8 a	0.0 b	3.8 -
	Express	0.0094	lb ai/a	A						
	Metribuzin 75	0.188	lb ai/a	A						
	nonionic surfactact	0.25	% v/v	A						
LSD P=.05					5.10	2.38	19.71	7.34	3.11	4.52
Standard Deviation					3.55	1.66	13.75	5.12	2.17	3.15
CV					124.84	77.04	27.31	5.99	225.49	136.71
Grand Mean					2.85	2.15	50.33	85.38	0.96	2.31
Levene's F^					0.489	0.824	1.475	0.579	4.442*	2.023*
Levene's Prob(F)					0.909	0.626	0.175	0.845	0.00*	0.048*
Rank X2					.	.	.	.	.	.
P(Rank X2)					.	.	.	.	.	.
Shapiro-Wilk^					0.9441*	0.628*	0.6761*	0.9871	0.6515*	0.9518*
P(Shapiro-Wilk)^					0.0166*	0.0*	0.0*	0.843	0.0*	0.0349*
Skewness^					0.3462	-2.2135*	-2.489*	-0.3157	-1.1528*	0.517
P(Skewness)^					0.3132	0.0*	0.0*	0.3573	0.0013*	0.1344
Kurtosis^					1.3438*	15.393*	14.8621*	0.8292	7.1314*	0.7982
P(Kurtosis)^					0.0498*	0.0*	0.0*	0.2206	0.0*	0.2381
Replicate F					1.308	0.168	0.363	2.294	0.409	1.664
Replicate Prob(F)					0.2868	0.9175	0.7803	0.0944	0.7474	0.1919
Treatment F					3.609	22.164	16.509	27.376	4.909	2.035
Treatment Prob(F)					0.0014	0.0001	0.0001	0.0001	0.0001	0.0497

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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University of Maryland

Efficacy of Quelex and Pixarro Tank-mixes on Hard to Control Broadleaf Weeds

Trial ID: SG1-22 Cooperator Trial ID:
Protocol ID: SG1-22 Location: I-08 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Corteva
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	7*	8*	9*	10*	11*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				CERVU	LAMAM	POAAN	ERICA	CERVU
	Pest Name				common mouse-ea>	Henbit deadnett>	Annual bluegrass	mare's-tail	common mouse-ea>
	Crop Type, Code								
	Crop Name								
	Rating Date				Apr-22-2022	Apr-22-2022	Apr-22-2022	May-12-2022	May-12-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Apr-27-2022	Apr-27-2022	Apr-27-2022	May-16-2022	May-16-2022
	Days After First/Last Applic.				28, 28	28, 28	28, 28	48, 48	48, 48
	Trt-Eval Interval				28 DA-A	28 DA-A	28 DA-A	48 DA-A	48 DA-A
1	untreated check				0.0	0.0	0.0	0.0	24.3
2	Quelex	0.0096	lb ai/a	A	84.5 bc	90.8 -	2.5 -	100.0 a	97.0 -
	crop oil concentrate	1	% v/v	A					
3	Quelex	0.0096	lb ai/a	A	87.0 bc	95.8 -	2.5 -	97.5 a	97.8 -
	Harmony SG	0.0184	lb ai/a	A					
	Express	0.0094	lb ai/a	A					
	crop oil concentrate	1	% v/v	A					
4	Quelex	0.0096	lb ai/a	A	87.5 b	93.5 -	10.0 -	100.0 a	97.8 -
	Powerflex HL	0.0164	lb ai/a	A					
	crop oil concentrate	1	% v/v	A					
5	Quelex	0.0096	lb ai/a	A	96.0 a	74.8 -	2.5 -	100.0 a	100.0 -
	Metribuzin 75	0.188	lb ai/a	A					
	crop oil concentrate	1	% v/v	A					
6	Pixxaro	0.114	lb ai/a	A	83.0 c	94.3 -	7.5 -	100.0 a	98.8 -
	crop oil concentrate	1	% v/v	A					
7	Pixxaro	0.114	lb ai/a	A	84.5 bc	95.5 -	7.5 -	100.0 a	98.5 -
	Harmony SG	0.0184	lb ai/a	A					
	Express	0.0094	lb ai/a	A					
	crop oil concentrate	1	% v/v	A					
8	Pixxaro	0.114	lb ai/a	A	84.5 bc	94.0 -	7.5 -	100.0 a	97.8 -
	Powerflex HL	0.0164	lb ai/a	A					
	crop oil concentrate	1	% v/v	A					
9	Pixxaro	0.114	lb ai/a	A	97.5 a	99.5 -	2.5 -	100.0 a	100.0 -
	Metribuzin 75	0.188	lb ai/a	A					
	crop oil concentrate	1	% v/v	A					
10	Tarzec	0.02	lb ai/a	A	83.0 c	92.3 -	2.5 -	95.0 a	97.3 -
	crop oil concentrate	1	% v/v	A					
11	Tarzec	0.02	lb ai/a	A	83.5 bc	95.3 -	7.5 -	100.0 a	98.0 -
	Harmony SG	0.0184	lb ai/a	A					
	Express	0.0094	lb ai/a	A					
	crop oil concentrate	1	% v/v	A					
12	Tarzec	0.02	lb ai/a	A	98.5 a	99.3 -	5.0 -	77.5 a	99.5 -
	Metribuzin 75	0.188	lb ai/a	A					
	crop oil concentrate	1	% v/v	A					
13	Harmony SG	0.0184	lb ai/a	A	84.0 bc	84.0 -	5.0 -	2.5 b	97.8 -
	Express	0.0094	lb ai/a	A					
	Starane Ultra	0.00875	lb ai/a	A					
	crop oil concentrate	1	% v/v	A					

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
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Trial ID: SG1-22 Cooperator Trial ID:
Protocol ID: SG1-22 Location: I-08 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Corteva
Investigator (Creator): Kurt Vollmer

Pest Type			W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
Pest Code			CERVU	LAMAM	POAAN	ERICA	CERVU
Pest Name			common mouse-ea>	Henbit deadnett>	Annual bluegrass	mare's-tail	common mouse-ea>
Crop Type, Code							
Crop Name							
Rating Date			Apr-22-2022	Apr-22-2022	Apr-22-2022	May-12-2022	May-12-2022
Rating Type			CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
Rating Unit/Min/Max			%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
Data Entry Date			Apr-27-2022	Apr-27-2022	Apr-27-2022	May-16-2022	May-16-2022
Days After First/Last Applic.			28, 28	28, 28	28, 28	48, 48	48, 48
Trt-Eval Interval			28 DA-A	28 DA-A	28 DA-A	48 DA-A	48 DA-A
Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	7*	8*	9*	10*	11*
14	Harmony SG	0.0184	lb ai/a	A	97.5 a	76.3 -	5.0 -	17.5 b	95.0 -
	Express	0.0094	lb ai/a	A					
	Metribuzin 75	0.188	lb ai/a	A					
	nonionic surfactact	0.25	% v/v	A					
LSD P=.05					2.72	25.96	7.26	20.68	4.50
Standard Deviation					1.90	18.10	5.06	14.42	3.14
CV					2.15	19.86	97.52	17.2	3.2
Grand Mean					88.54	91.15	5.19	83.85	98.08
Levene's F^					1.652	0.547	0.485	0.823	0.798
Levene's Prob(F)					0.117	0.87	0.911	0.627	0.65
Rank X2					.	.	.	.	.
P(Rank X2)					.	.	.	.	.
Shapiro-Wilk^					0.9548*	0.7208*	0.956	0.748*	0.8035*
P(Shapiro-Wilk)^					0.0467*	0.0*	0.0524	0.0*	0.0*
Skewness^					0.7549*	-2.2443*	0.1469	-1.6355*	-2.2856*
P(Skewness)^					0.0308*	0.0*	0.6674	0.0*	0.0*
Kurtosis^					1.461*	8.7732*	-0.9593	12.062*	11.8594*
P(Kurtosis)^					0.0335*	0.0*	0.1575	0.0*	0.0*
Replicate F					2.787	1.761	0.675	2.189	2.055
Replicate Prob(F)					0.0546	0.1720	0.5730	0.1062	0.1234
Treatment F					43.919	0.772	1.050	21.577	0.739
Treatment Prob(F)					0.0001	0.6740	0.4279	0.0001	0.7048

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
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* Adjusted means
^Calculated from residual.

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Trial ID: SG1-22 Cooperator Trial ID:
Protocol ID: SG1-22 Location: I-08 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Corteva
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	12*	13*
	Pest Type				W, Weed	W, Weed
	Pest Code				LAMAM	POAAN
	Pest Name				Henbit deadnett>	Annual bluegrass
	Crop Type, Code					
	Crop Name					
	Rating Date				May-12-2022	May-12-2022
	Rating Type				CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100
	Data Entry Date				May-16-2022	May-16-2022
	Days After First/Last Applic.				48, 48	48, 48
	Trt-Eval Interval				48 DA-A	48 DA-A
1	untreated check				24.8	0.0
2	Quelex	0.0096	lb ai/a	A	100.0 a	27.5 -
	crop oil concentrate	1	% v/v	A		
3	Quelex	0.0096	lb ai/a	A	99.3 a	17.5 -
	Harmony SG	0.0184	lb ai/a	A		
	Express	0.0094	lb ai/a	A		
	crop oil concentrate	1	% v/v	A		
4	Quelex	0.0096	lb ai/a	A	97.0 a	36.3 -
	Powerflex HL	0.0164	lb ai/a	A		
	crop oil concentrate	1	% v/v	A		
5	Quelex	0.0096	lb ai/a	A	100.0 a	40.5 -
	Metribuzin 75	0.188	lb ai/a	A		
	crop oil concentrate	1	% v/v	A		
6	Pixxaro	0.114	lb ai/a	A	100.0 a	52.0 -
	crop oil concentrate	1	% v/v	A		
7	Pixxaro	0.114	lb ai/a	A	100.0 a	18.8 -
	Harmony SG	0.0184	lb ai/a	A		
	Express	0.0094	lb ai/a	A		
	crop oil concentrate	1	% v/v	A		
8	Pixxaro	0.114	lb ai/a	A	100.0 a	32.0 -
	Powerflex HL	0.0164	lb ai/a	A		
	crop oil concentrate	1	% v/v	A		
9	Pixxaro	0.114	lb ai/a	A	100.0 a	12.5 -
	Metribuzin 75	0.188	lb ai/a	A		
	crop oil concentrate	1	% v/v	A		
10	Tarzec	0.02	lb ai/a	A	100.0 a	22.5 -
	crop oil concentrate	1	% v/v	A		
11	Tarzec	0.02	lb ai/a	A	98.8 a	46.3 -
	Harmony SG	0.0184	lb ai/a	A		
	Express	0.0094	lb ai/a	A		
	crop oil concentrate	1	% v/v	A		
12	Tarzec	0.02	lb ai/a	A	100.0 a	68.8 -
	Metribuzin 75	0.188	lb ai/a	A		
	crop oil concentrate	1	% v/v	A		
13	Harmony SG	0.0184	lb ai/a	A	56.3 c	37.0 -
	Express	0.0094	lb ai/a	A		
	Starane Ultra	0.00875	lb ai/a	A		
	crop oil concentrate	1	% v/v	A		

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
^Calculated from residual.

University of Maryland

Efficacy of Quelex and Pixarro Tank-mixes on Hard to Control Broadleaf Weeds

Trial ID: SG1-22 Cooperator Trial ID:
Protocol ID: SG1-22 Location: I-08 Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Corteva
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	12*	13*
	Pest Type				W, Weed	W, Weed
	Pest Code				LAMAM	POAAN
	Pest Name				Henbit deadnett>	Annual bluegrass
	Crop Type, Code					
	Crop Name					
	Rating Date				May-12-2022	May-12-2022
	Rating Type				CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100
	Data Entry Date				May-16-2022	May-16-2022
	Days After First/Last Applic.				48, 48	48, 48
	Trt-Eval Interval				48 DA-A	48 DA-A
14	Harmony SG	0.0184	lb ai/a	A	80.8 b	48.8 -
	Express	0.0094	lb ai/a	A		
	Metribuzin 75	0.188	lb ai/a	A		
	nonionic surfactact	0.25	% v/v	A		
	LSD P=.05				10.23	45.80
	Standard Deviation				7.14	31.93
	CV				7.53	90.2
	Grand Mean				94.77	35.40
	Levene's F^				2.179*	0.461
	Levene's Prob(F)				0.033*	0.925
	Rank X2				.	.
	P(Rank X2)				.	.
	Shapiro-Wilk^				0.7182*	0.9721
	P(Shapiro-Wilk)^				0.0*	0.259
	Skewness^				-1.0258*	-0.0383
	P(Skewness)^				0.004*	0.9106
	Kurtosis^				11.5018*	-0.9322
	P(Kurtosis)^				0.0*	0.1693
	Replicate F				0.861	3.274
	Replicate Prob(F)				0.4702	0.0320
	Treatment F				12.698	1.005
	Treatment Prob(F)				0.0001	0.4641

Means followed by same letter or symbol do not significantly differ (P=.05, Student-Newman-Keuls).
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
Untreated treatment(s) 1 excluded from analysis.
* Adjusted means
^Calculated from residual.

University of Maryland

Bayer Herbicides for Weed Control and Crop Safety in Winter Wheat

Trial ID: SG2-22 Cooperator Trial ID:
Protocol ID: SG2-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Bayer
Investigator (Creator): Kurt Vollmer

General Trial Information
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist

Status: E established
ARM Trial Created On: Mar-23-2022
Initiation Date: Nov-15-2021
Completion Date: May-12-2022

Trial Location
City: Queenstown **Country:** USA United States
State/Prov.: Maryland
Postal Code: 21658

Latitude of LL Corner °: 38.9149 N
Longitude of LL Corner °: -76.14834 W

Conducted Under GLP: No
Conducted Under GEP: No

Role: INVEST investigator
Investigator: Kurt Vollmer **Title:** Extension Weed Specialist
Organization: University of Maryland
Address 1: 124 Wye Narrows Drive
E-mail: kvollmer@umd.edu
City: Queenstown **State/Prov:** MD **Postal Code:** 21658
Role: SPONSR sponsor
Sponsor: Bayer

Crop Description
Crop 1: C TRZAW Triticum aestivum Winter wheat **BBCH Scale:** BCER
Entry Date: Mar-28-2022 **Stage Scale:** BBCH
Variety: P25R74
Planting Date: Nov-15-2021 **Planting Rate:** 1700000 S/A

Pest Description
Pest 1 Type: W **Code:** LAMAM Lamium amplexicaule **Entry Date:** Mar-28-2022
Common Name: Henbit deadnettle **Stage Scale:** BBCH
Artificial Population: N no

Pest 2 Type: W **Code:** CERVU Cerastium fontanum vulgare **Entry Date:** Mar-28-2022
Common Name: common mouse-ear chickweed **Stage Scale:** BBCH
Artificial Population: N no

Pest 3 Type: W **Code:** VERPE Veronica persica **Entry Date:** Mar-28-2022
Common Name: Persian speedwell **Stage Scale:** BBCH
Artificial Population: N no

Pest 4 Type: W **Code:** ALLVI Allium vineale **Entry Date:** Mar-28-2022
Common Name: Field garlic **Stage Scale:** BBCH
Artificial Population: N no

Site and Design
Treated Plot Width: 10 FT
Treated Plot Length: 25 FT
Treated Plot Area: 250.0 FT2
Replications: 4 **Treatments:** 7 **Plots:** 28 **Study Design:** RACOBL Randomized Complete Block (RCB)

Soil Description
Description Name: I-08
% Sand: 20 **% OM:** 2.4 **Texture:** SIL silt loam
% Silt: 67 **Soil Name:** Mattapex-Butlertown silt loam
% Clay: 13
pH: 6.2 **CEC:** 5.3

University of Maryland

Bayer Herbicides for Weed Control and Crop Safety in Winter Wheat

Trial ID: SG2-22 Cooperator Trial ID:
Protocol ID: SG2-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Bayer
Investigator (Creator): Kurt Vollmer

Application Description

	A
Application Date	Mar-25-2022
Appl. Start Time	2:15 PM
Appl. Stop Time	3:00 PM
Application Method	SPRAY
Application Timing	POSPOS
Application Placement	BROFOL
Applied By	Vollmer, K.
Appl. Entry Date	Mar-28-2022
Air Temperature Start, Stop	59, 59 F
% Relative Humidity Start, Stop	46, 46
Wind Velocity+Dir. Start	9 MPH, E
Wind Velocity+Dir. Stop	9 MPH, E
Wind Velocity+Dir. Max	9 MPH, E
Wet Leaves (Y/N)	N, no
Soil Moisture	WET
% Cloud Cover	100
Next Moisture Occurred On	Mar-31-2022
Time to Next Moisture	6.0 DAY
Moisture 6 Hours after Appl.	0 IN
Moisture 1 Week after Appl.	0.08 IN

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale	TRZAW, BCER
Stage Majority, Percent	2, -
Stage Minimum, Percent	2, -
Stage Maximum, Percent	2, -
Height Average	6 IN

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale	LAMAM, W, BBCH
Stage Majority, Percent	67, -
Stage Minimum, Percent	67, -
Stage Maximum, Percent	67, -
Height Average	7 IN
Height Minimum, Maximum	6, 8
Pest 2 Code, Type, Scale	CERVU, W, BBCH
Height Average	4 IN
Height Minimum, Maximum	3, 5
Pest 3 Code, Type, Scale	VERPE, W, BBCH
Stage Majority, Percent	67, -
Stage Minimum, Percent	67, -
Stage Maximum, Percent	67, -
Height Average	4.75 IN
Height Minimum, Maximum	4, 5
Pest 4 Code, Type, Scale	ALLVI, W, BBCH
Height Average	7 IN
Height Minimum, Maximum	6, 8

University of Maryland

Bayer Herbicides for Weed Control and Crop Safety in Winter Wheat

Trial ID: SG2-22 Cooperator Trial ID:
Protocol ID: SG2-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Bayer
Investigator (Creator): Kurt Vollmer

Application Equipment

	A
Equipment Type	BACCAI
Operation Pressure	23 PSI
Nozzle Type	FLAEVE
Nozzle Tip Size, Color	8002VS, Yellow
Nozzle Spacing	18.0 IN
Nozzles/Row	6.0
Boom Length	6.0 FT
Boom Height	12.0 IN
Ground Speed	3 MPH
Carrier	WATER
Application Amount	15 GAL/AC
Mix Size	2.0 L
Propellant	COMCO2

Notes

Context	Date	By	Notes
STATUS	Mar-23-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Mar-28-2022	Kurt Vollmer	Automatically added by ARM: Trial Status updated to 'E' when Application Date entered.

University of Maryland

Bayer Herbicides for Weed Control and Crop Safety in Winter Wheat

Trial ID: SG2-22 Cooperator Trial ID:
Protocol ID: SG2-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Bayer
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Unit	Appl Code	1*	2*	3*	4*	5*	6*
	Pest Type					W, Weed	W, Weed	W, Weed	W, Weed	
	Pest Code					CERVU	LAMAM	STEME	POAAN	
	Pest Name					common mouse-ea>	Henbit deadnett>	chickweed	Annual bluegrass	
	Crop Type, Code				C, TRZAW					C, TRZAW
	Crop Name				Winter wheat					Winter wheat
	Rating Date				Apr-1-2022	Apr-1-2022	Apr-1-2022	Apr-1-2022	Apr-1-2022	Apr-11-2022
	Rating Type				PHYGEN	CONTRO	CONTRO	CONTRO	CONTRO	PHYGEN
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Apr-5-2022	Apr-5-2022	Apr-5-2022	Apr-5-2022	Apr-5-2022	Apr-11-2022
	Days After First/Last Applic.				7, 7	7, 7	7, 7	7, 7	7, 7	17, 17
	Trt-Eval Interval				7 DA-A	7 DA-A	7 DA-A	7 DA-A	7 DA-A	17 DA-A
1	untreated				0.0	0.0	0.0	0.0	0.0	0.0
2	Huskie FX	0.279	lb ai/a	A	0.0 -	40.0 a	7.5 -	40.0 a	0.0 -	0.0 -
3	Huskie FX	0.323	lb ai/a	A	0.0 -	30.0 ab	7.5 -	30.0 ab	0.0 -	0.0 -
4	Huskie	0.206	lb ai/a	A	0.0 -	10.0 bc	2.5 -	10.0 bc	0.0 -	0.0 -
5	Huskie	0.241	lb ai/a	A	0.0 -	12.5 bc	2.5 -	12.5 bc	0.0 -	2.5 -
6	Osprey Xtra	0.0178	lb ai/a	A	0.0 -	0.0 c	2.5 -	0.0 c	0.0 -	3.0 -
7	Osprey	0.0134	lb ai/a	A	0.0 -	0.0 c	2.5 -	0.0 c	0.0 -	0.0 -
	LSD P=.05				.	18.37	7.78	18.37	.	2.77
	Standard Deviation				0.00	12.19	5.16	12.19	0.00	1.84
	CV				0.0	79.07	123.94	79.07	0.0	200.82
	Grand Mean				0.00	15.42	4.17	15.42	0.00	0.92
	Levene's F^				.	1.424	0.143	1.424	.	10.147*
	Levene's Prob(F)				.	0.263	0.98	0.263	.	0.00*
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				.	0.9538	0.9112*	0.9538	.	0.962
	P(Shapiro-Wilk)^				.	0.3269	0.0374*	0.3269	.	0.4801
	Skewness^				.	-0.3293	0.218	-0.3293	.	0.0
	P(Skewness)^				.	0.5177	0.6677	0.5177	.	1.0
	Kurtosis^				.	-0.7078	-0.6347	-0.7078	.	-0.2018
	P(Kurtosis)^				.	0.4748	0.5211	0.4748	.	0.8377
	Replicate F				0.000	2.346	0.625	2.346	0.000	1.197
	Replicate Prob(F)				1.0000	0.1140	0.6098	0.1140	1.0000	0.3447
	Treatment F				0.000	7.161	1.000	7.161	0.000	2.410
	Treatment Prob(F)				1.0000	0.0013	0.4509	0.0013	1.0000	0.0857

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* Adjusted means
Could not calculate LSD (% mean diff) for columns 1,5,9,10,14 because error mean square = 0.
^Calculated from residual.

University of Maryland

Bayer Herbicides for Weed Control and Crop Safety in Winter Wheat

Trial ID: SG2-22 Cooperator Trial ID:
Protocol ID: SG2-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Bayer
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	7*	8*	9*	10*	11*	12*
	Pest Type				W, Weed	W, Weed	W, Weed		W, Weed	W, Weed
	Pest Code				CERVU	LAMAM	POAAN		CERVU	LAMAM
	Pest Name				common mouse-ea>	Henbit deadnett>	Annual bluegrass		common mouse-ea>	Henbit deadnett>
	Crop Type, Code							C, TRZAW		
	Crop Name							Winter wheat		
	Rating Date				Apr-11-2022	Apr-11-2022	Apr-11-2022	Apr-20-2022	Apr-20-2022	Apr-20-2022
	Rating Type				CONTRO	CONTRO	CONTRO	PHYGEN	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%1, -, -	%, 0, 100	%, 0, 100
	Data Entry Date				Apr-11-2022	Apr-11-2022	Apr-11-2022	Apr-21-2022	Apr-21-2022	Apr-21-2022
	Days After First/Last Applic.				17, 17	17, 17	17, 17	26, 26	26, 26	26, 26
	Trt-Eval Interval				17 DA-A	17 DA-A	17 DA-A	26 DA-A	26 DA-A	26 DA-A
1	untreated				0.0	0.0	0.0	0.0	0.0	0.0
2	Huskie FX	0.279	lb ai/a	A	66.3 b	95.0 a	0.0 -	0.0 -	88.8 -	97.8 a
3	Huskie FX	0.323	lb ai/a	A	88.3 a	95.0 a	0.0 -	0.0 -	90.8 -	99.5 a
4	Huskie	0.206	lb ai/a	A	88.8 a	95.3 a	0.0 -	0.0 -	86.3 -	100.0 a
5	Huskie	0.241	lb ai/a	A	85.5 a	94.5 a	0.0 -	0.0 -	85.0 -	98.8 a
6	Osprey Xtra	0.0178	lb ai/a	A	30.0 c	80.8 b	0.0 -	0.0 -	94.0 -	73.8 b
7	Osprey	0.0134	lb ai/a	A	30.0 c	72.5 c	0.0 -	0.0 -	91.3 -	60.0 c
	LSD P=.05				11.22	2.50	.	.	6.52	7.25
	Standard Deviation				7.44	1.66	0.00	0.00	4.33	4.81
	CV				11.49	1.86	0.0	0.0	4.85	5.45
	Grand Mean				64.79	88.83	0.00	0.00	89.33	88.29
	Levene's F^				12.82*	2.442	.	.	1.686	1.102
	Levene's Prob(F)				0.00*	0.074	.	.	0.189	0.394
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Shapiro-Wilk^				0.9366	0.9622	.	.	0.9683	0.8475*
	P(Shapiro-Wilk)^				0.1371	0.4852	.	.	0.625	0.002*
	Skewness^				-0.2087	0.1832	.	.	0.2451	1.3714*
	P(Skewness)^				0.681	0.7181	.	.	0.6295	0.0118*
	Kurtosis^				1.2774	-0.2778	.	.	-0.7526	5.2959*
	P(Kurtosis)^				0.2027	0.7781	.	.	0.4477	0.0*
	Replicate F				0.338	0.769	0.000	0.000	7.758	1.091
	Replicate Prob(F)				0.7984	0.5289	1.0000	1.0000	0.0023	0.3833
	Treatment F				57.409	140.344	0.000	0.000	2.395	50.887
	Treatment Prob(F)				0.0001	0.0001	1.0000	1.0000	0.0871	0.0001

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* Adjusted means
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^Calculated from residual.

University of Maryland

Bayer Herbicides for Weed Control and Crop Safety in Winter Wheat

Trial ID: SG2-22 Cooperator Trial ID:
Protocol ID: SG2-22 Location: Trial Year: 2022
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact: Bayer
Investigator (Creator): Kurt Vollmer

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	13*	14*	15*	16*	17*
	Pest Type				W, Weed	W, Weed	W, Weed	W, Weed	W, Weed
	Pest Code				POAAN	ERICA	CERVU	LAMAM	POAAN
	Pest Name				Annual bluegrass	mare's-tail	common mouse-ea>	Henbit deadnett>	Annual bluegrass
	Crop Type, Code								
	Crop Name								
	Rating Date				Apr-20-2022	May-12-2022	May-12-2022	May-12-2022	May-12-2022
	Rating Type				CONTRO	CONTRO	CONTRO	CONTRO	CONTRO
	Rating Unit/Min/Max				%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100	%, 0, 100
	Data Entry Date				Apr-21-2022	May-16-2022	May-16-2022	May-16-2022	May-16-2022
	Days After First/Last Applic.				26, 26	48, 48	48, 48	48, 48	48, 48
	Trt-Eval Interval				26 DA-A	48 DA-A	48 DA-A	48 DA-A	48 DA-A
1	untreated				15.0	0.0	0.0	0.0	0.0
2	Huskie FX	0.279	lb ai/a	A	0.0 b	100.0 -	98.3 -	100.0 a	43.8 abc
3	Huskie FX	0.323	lb ai/a	A	15.0 b	100.0 -	99.3 -	100.0 a	36.3 bc
4	Huskie	0.206	lb ai/a	A	37.5 b	100.0 -	100.0 -	99.5 a	66.3 ab
5	Huskie	0.241	lb ai/a	A	0.0 b	100.0 -	100.0 -	100.0 a	15.0 c
6	Osprey Xtra	0.0178	lb ai/a	A	93.8 a	0.0 -	98.3 -	77.5 a	90.0 a
7	Osprey	0.0134	lb ai/a	A	35.0 b	0.0 -	97.0 -	37.5 b	80.0 ab
	LSD P=.05				40.08	.	3.74	21.36	36.23
	Standard Deviation				26.59	0.00	2.48	14.17	24.04
	CV				88.03	0.0	2.51	16.53	43.54
	Grand Mean				30.21	66.67	98.79	85.75	55.21
	Levene's F^				4.372*	.	2.046	0.946	0.918
	Levene's Prob(F)				0.009*	.	0.12	0.476	0.491
	Rank X2				.	.	.	.	.
	P(Rank X2)				.	.	.	.	.
	Shapiro-Wilk^				0.9725	.	0.9151*	0.8033*	0.9664
	P(Shapiro-Wilk)^				0.7294	.	0.0456*	0.0003*	0.5804
	Skewness^				-0.004	.	-0.9797	-1.2067*	-0.3785
	P(Skewness)^				0.9938	.	0.0629	0.0245*	0.4579
	Kurtosis^				-0.5985	.	1.1227	4.3566*	-0.5935
	P(Kurtosis)^				0.545	.	0.261	0.0002*	0.5483
	Replicate F				1.455	0.000	0.115	0.233	5.247
	Replicate Prob(F)				0.2666	1.0000	0.9497	0.8718	0.0112
	Treatment F				6.980	0.000	0.902	12.724	5.613
	Treatment Prob(F)				0.0015	1.0000	0.5049	0.0001	0.0041

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* Adjusted means
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^Calculated from residual.