The Ohio State University

USB Green Planting FY21

Trial ID: USB Green Planting FY21 Cooperator Trial ID:
Protocol ID: USB Green Planting FY21 Location: Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Rodrigo Werle

General Trial Information
Investigator: Rodrigo Werle

Status: E established
ARM Trial Created On: Jan-25-2021

Trial Location
City: South Charleston Country: USA United States
State/Prov.: Ohio
Postal Code: 45368

Latitude of LL Corner °: 39.86068 N
Longitude of LL Corner °: -83.66222 W
Altitude of LL Corner: 1099.00 FT

Conducted Under GLP: No
Conducted Under GEP: No
None
Role: INVEST investigator
Investigator: Rodrigo Werle

Crop Description

Crop 1: C GLXMA Glycine max — Soybean
Entry Date: May-2-2022 — Stage Scale: BBCH
Variety: P35T15E
Attributes: 2,4-D Choline, Glyphosate, Glufosinate Tol
Seed Size: 2978 S/LB
Planting Date: Apr-28-2022 — Planting Rate: 155000 S/A
Depth: 1.5 IN
Rows per Plot: 4
Row Spacing: 30 IN — Planting Method: PLANTD planted
Planting Equipment: FE field equipment
Seed Bed: MEDTRA medium/trashy
Soil Moisture: DAMP damp
Emergence Date: May-16-2022
Harvest Date: Oct-12-2022 — Harvest Equipment: Kincaid 8XP
Moisture Meter: Harvest Master — Harvested Width: 5 FT
% Standard Moisture: 13.0 — Harvested Length: 30 FT
Weighing Equipment: Harvest Master HM800

Crop 2: C GLXMA Glycine max — Soybean
Entry Date: May-2-2022 — Stage Scale: BBCH
Variety: P35T15E
Attributes: 2,4-D Choline, Glyphosate, Glufosinate Tol
Seed Size: 2978 S/LB
Planting Date: May-24-2022 — Planting Rate: 155000 S/A
Depth: 1.5 IN
Rows per Plot: 4
Row Spacing: 30 IN — Planting Method: PLANTD planted
Planting Equipment: FE field equipment
Seed Bed: MEDTRA medium/trashy
Soil Temperature: 71 F — Soil Moisture: SLIDRY slightly dry
Emergence Date: Jun-7-2022
Harvest Date: Oct-12-2022 — Harvest Equipment: Kincaid 8XP
Moisture Meter: Harvest Master — Harvested Width: 5 FT
% Standard Moisture: 13.0 — Harvested Length: 30 FT
Weighing Equipment: Harvest Master HM800

Crop 3: C SECCW Secale cereale — Winter rye
Entry Date: Mar-2-2022 — Stage Scale: BBCH
Variety: VNS
Planting Date: Oct-12-2021 — Planting Rate: 60 LB/A
Depth: 1.5 IN
Rows per Plot: 14
Row Spacing: 7.5 IN — Planting Method: DRILLE drilled
Planting Equipment: DD disc drill
Seed Bed: MEDTRA medium/trashy
Soil Moisture: SLIDRY slightly dry
Emergence Date: Oct-26-2021
Harvested Width: 5 FT
% Standard Moisture: 13 — Harvested Length: 30 FT

Pest Description

Pest 1 Type: W Code: ECHCG Echinochloa crus-galli — Entry Date: Jun-21-2022
Common Name: common barnyardgrass — Stage Scale: BBCH

Pest 2 Type: W Code: AMBTR Ambrosia trifida — Entry Date: Jun-21-2022
Common Name: Giant ragweed — Stage Scale: BBCH

Pest 3 Type: W Code: AMATA Amaranthus x tamariscinus — Entry Date: Jun-21-2022
Common Name: common water hemp — Stage Scale: BBCH

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Site and Design

Treated Plot Width: 10 FT Site Type: FIELD field
Treated Plot Length: 30 FT Experimental Unit: 1 PLOT plot
Treated Plot Area: 300.0 FT2 Tillage Type: NOTILL no-till
Replications: 4 Treatments: 12 Plots: 48 Study Design: SPLPLO Split-Plot

No.	Previous Crop	Year
1.	SOYBEAN	2021

Soil Description

Description Name: A-1 East
% Sand: 40 % OM: 3.2 Texture: LOAM
% Silt: 35 Soil Name: Kokomo
% Clay: 25 Fert. Level: G good
pH: 7.0 CEC: 15.1
Soil Drainage: G good
Comment:

Spectrum Analytic, Washington Court House, Ohio

Application Description

	A	B	C	D	E	F
Application Date	Apr-22-2022	Apr-28-2022	May-25-2022	Jun-15-2022	Jun-21-2022	Jun-28-2022
Appl. Start Time	9:00 AM	3:00 PM	8:00 AM	7:45 AM	10:00 AM	8:00 AM
Appl. Stop Time	9:30 AM	3:30 PM	8:30 AM	8:05 AM	10:30 AM	8:15 AM
Application Method	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Timing	EARLY TERM	AT PLANT	Late Term	POST	POST	POST
Application Placement	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL
Applied By	Dobbels	Dobbels	Dobbels	Dobbels	Dobbels	Dobbels
Appl. Entry Date	May-2-2022	May-2-2022	May-25-2022	Jun-21-2022	Jun-21-2022	Oct-17-2022
Air Temperature Start, Stop	57, 57 F	51, 51 F	64, 64 F	78, 78 F	78, 78 F	51, 51 F
% Relative Humidity Start, Stop	73, 73	39, 39	87, 87	88, 88	52, 52	86, 86
Wind Velocity+Dir. Start	4 MPH, W	7 MPH, E	10 MPH, SE	6 MPH, W	7 MPH, W	3 MPH, NW
Wind Velocity+Dir. Stop	4 MPH, W	7 MPH, E	10 MPH, SE	6 MPH, W	7 MPH, W	3 MPH, NW
Wind Velocity+Dir. Max	4 MPH, W	7 MPH, E	10 MPH, SE	6 MPH, W	7 MPH, W	3 MPH, NW
Wet Leaves (Y/N)	Y, yes	N, no	N, no	N, no	N, no	N, no
Soil Temperature	49 F	50 F	61 F	76 F	76 F	62 F
Soil Moisture	SLIWET	SLIWET	SLIDRY	MOIST	MOIST	dry
Soil Surface Condition	MEDTRA	MEDTRA	MEDTRA	MEDTRA	MEDTRA	MEDTRA
% Cloud Cover	80	65	95	80	0	15
Next Moisture Occurred On	Apr-22-2022	Apr-30-2022	May-25-2022	Jun-26-2022	Jun-26-2022	Jul-1-2022
Time to Next Moisture	4.0 HR	2.0 DAY	8.0 HR	11.0 DAY	5.0 DAY	3.0 DAY
Moisture 6 Hours after Appl.	0.01 IN	0 IN	0 IN	0 IN	0 IN	0 IN
Moisture 1 Week after Appl.	0.04 IN	1.06 IN	1.51 IN	0 IN	0.3 IN	1.52 IN

Crop Stage At Each Application

	A	B	C	D	E	F
Crop 1 Code, BBCH Scale	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY
Days after Emergence	-24	-18	9	30	36	43
Stage Majority, Percent			11, 100		15, 80	16, 100
Stage Minimum, Percent					15, 10	
Stage Maximum, Percent					16, 10	
Height Average			2 IN		12 IN	13 IN
Height Minimum, Maximum			1.75, 2.25		10, 12	11, 13
Crop 2 Code, BBCH Scale	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY	GLXMA, BSOY
Days after Emergence	-46	-40	-13	8	14	21
Stage Majority, Percent					13, 100	14, 100
Height Average					5 IN	6 IN
Height Minimum, Maximum					4, 5	5, 8
Crop 3 Code, BBCH Scale	SECCW, BCER	SECCW, BCER	SECCW, BCER	SECCW, BCER	SECCW, BCER	SECCW, BCER
Days after Emergence	178	184	211	232	238	245

Pest Stage At Each Application

	A	B	C	D	E	F
Pest 1 Code, Type, Scale	ECHCG, W, BBCH	ECHCG, W, BBCH	ECHCG, W, BBCH	ECHCG, W, BBCH	ECHCG, W, BBCH	ECHCG, W, BBCH
Stage Majority, Percent					13, 100	
Height Average					5 IN	
Height Minimum, Maximum					5, 6	
Pest 2 Code, Type, Scale	AMBTR, W, BBCH	AMBTR, W, BBCH	AMBTR, W, BBCH	AMBTR, W, BBCH	AMBTR, W, BBCH	AMBTR, W, BBCH
Height Average					10 IN	
Height Minimum, Maximum					9, 12	
Pest 3 Code, Type, Scale	AMATA, W, BBCH	AMATA, W, BBCH	AMATA, W, BBCH	AMATA, W, BBCH	AMATA, W, BBCH	AMATA, W, BBCH
Height Average					4 IN	
Height Minimum, Maximum					2, 6	

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Application Equipment

	A	B	C	D	E	F
Appl. Equipment	10' AIXR	10' AIXR	10' AIXR	10' AIXR	10' AIXR	10' AIXR
Equipment Type	BACCAI	BACCAI	BACCAI	BACCAI	BACCAI	BACCAI
Operation Pressure	44 PSI	44 PSI	44 PSI	44 PSI	44 PSI	44 PSI
Nozzle Model	110015	110015	110015	110015	110015	110015
Nozzle Type	AI XR	AI XR	AI XR	AI XR	AI XR	AI XR
Nozzle TradeName	TeeJet	TeeJet	TeeJet	TeeJet	TeeJet	TeeJet
Nozzle Tip Size, Color	015, green	015, green	015, green	015, green	015, green	015, green
Nozzle Spacing	18 IN	18 IN	18 IN	18 IN	18 IN	18 IN
Boom Length	10 FT	10 FT	10 FT	10 FT	10 FT	10 FT
Boom Height	20 IN	20 IN	20 IN	20 IN	20 IN	20 IN
Ground Speed	3 MPH	3 MPH	3 MPH	3 MPH	3 MPH	3 MPH
Carrier	WATER	WATER	WATER	WATER	WATER	WATER
Water Hardness (ppm CaCO3)	250	250	250	250	250	250
Application Amount	15 GAL/AC	15 GAL/AC	15 GAL/AC	15 GAL/AC	15 GAL/AC	15 GAL/AC
Mix Overage	25 mL	25 mL	25 mL	25 mL	25 mL	25 mL
Mix Size	2 L	2 L	2 L	2 L	2 L	2 L
Spray pH	7.8	7.8	7.8	7.8	7.8	7.8
Propellant	COMCO2	COMCO2	COMCO2	COMCO2	COMCO2	COMCO2
Tank Mix (Y/N)	Y, yes	Y, yes	Y, yes	Y, yes	Y, yes	Y, yes

Notes

Context	Date	By	Notes
STATUS	Jan-25-2021	Rodrigo Werle	Automatically added by ARM: Trial Status updated to 'S' during trial creation.
STATUS	Mar-2-2022	Dr. Mark M. Loux	Automatically added by ARM: Trial Status updated to 'E' when Planting Date entered.

Pest Type		O, Other	O, Other	O, Other	O, Other	O, Other	
Pest Name							
Crop Type, Code		C, SECCW	C, SECCW	C, SECCW	C, SECCW	C, SECCW	C, SECCW
BBCH Scale		BCER	BCER	BCER	BCER	BCER	BCER
Crop Scientific Name		Secale cereale	Secale cereale	Secale cereale	Secale cereale	Secale cereale	Secale cereale
Crop Name		Winter rye	Winter rye	Winter rye	Winter rye	Winter rye	Winter rye
Rating Date		Apr-22-2022	Apr-22-2022	Apr-22-2022	May-24-2022	May-24-2022	May-24-2022
Rating Type		Biomass (3)	Height (5)	Zadok's(5)	Biomass (3)	Height (5)	Zadok's(5)
Rating Unit/Min/Max		/ft2, -, -	per plot, -, -	per plot, -, -	/ft2, -, -	per plot, -, -	per plot, -, -
Number of Subsamples		1	5	5	1	5	5
Assessed By		Per Treatment			Per Treatment		
Data Entry Date		May-4-2022	May-4-2022	May-4-2022	Jun-10-2022	May-25-2022	May-25-2022
Rating Timing		Early Plant	Early Plant	Early Plant	Late Plant	Late Plant	
Days After First/Last Applic.		0, 0	0, 0	0, 0	32, 26	32, 26	32, 26
Trt-Eval Interval		Early Term	Early Term	Early Term			
Days After Emergence		-46 DE-2	-46 DE-2	178 DE-3	-14 DE-2	-14 DE-2	210 DE-3
ARM Action Codes							
Number of Decimals							

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	5*	6*
1	No CC									
1	Early soy									
1	No PRE									
1	Liberty	32	fl oz/a	B						
1	Roundup PowerMAX	32	fl oz/a	B						
1	Ammonium Sulfate			B						
2	No CC									
2	Early soy									
2	Fierce EZ	6	fl oz/a	B						
2	Liberty	32	fl oz/a	B						
2	Roundup PowerMAX	32	fl oz/a	B						
2	Ammonium Sulfate			B						
3	No CC									
3	Late Soy									
3	No PRE									
3	Liberty	32	fl oz/a	B						
3	Roundup PowerMAX	32	fl oz/a	B						
3	Ammonium Sulfate			B						
4	No CC									
4	Late Soy									
4	Fierce EZ	6	fl oz/a	B						
4	Liberty	32	fl oz/a	B						
4	Roundup PowerMAX	32	fl oz/a	B						
4	Ammonium Sulfate			B						

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Pest Type		O, Other	O, Other	O, Other	O, Other	O, Other	
Pest Name							
Crop Type, Code		C, SECCW	C, SECCW	C, SECCW	C, SECCW	C, SECCW	C, SECCW
BBCH Scale		BCER	BCER	BCER	BCER	BCER	BCER
Crop Scientific Name		Secale cereale	Secale cereale	Secale cereale	Secale cereale	Secale cereale	Secale cereale
Crop Name		Winter rye	Winter rye	Winter rye	Winter rye	Winter rye	Winter rye
Rating Date		Apr-22-2022	Apr-22-2022	Apr-22-2022	May-24-2022	May-24-2022	May-24-2022
Rating Type		Biomass (3)	Height (5)	Zadok's(5)	Biomass (3)	Height (5)	Zadok's(5)
Rating Unit/Min/Max		/ft2, -, -	per plot, -, -	per plot, -, -	/ft2, -, -	per plot, -, -	per plot, -, -
Number of Subsamples		1	5	5	1	5	5
Assessed By		Per Treatment			Per Treatment		
Data Entry Date		May-4-2022	May-4-2022	May-4-2022	Jun-10-2022	May-25-2022	May-25-2022
Rating Timing		Early Plant	Early Plant	Early Plant	Late Plant	Late Plant	
Days After First/Last Applic.		0, 0	0, 0	0, 0	32, 26	32, 26	32, 26
Trt-Eval Interval		Early Term	Early Term	Early Term			
Days After Emergence		-46 DE-2	-46 DE-2	178 DE-3	-14 DE-2	-14 DE-2	210 DE-3
ARM Action Codes							
Number of Decimals							

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	5*	6*
5	CC Early Term	60	lb/a		25.763 -	22.9 -	24.9 -			
5	Roundup PowerMAX	32	fl oz/a	A						
5	Ammonium Sulfate			A						
5	Early soy									
5	No PRE									
5	Liberty	32	fl oz/a	B						
5	Roundup PowerMAX	32	fl oz/a	B						
5	Ammonium Sulfate			B						
6	CC Early Term	60	lb/a		22.190 -	21.6 -	24.7 -			
6	Roundup PowerMAX	32	fl oz/a	A						
6	Ammonium Sulfate			A						
6	Early soy									
6	Fierce EZ	6	fl oz/a	B						
6	Liberty	32	fl oz/a	B						
6	Roundup PowerMAX	32	fl oz/a	B						
6	Ammonium Sulfate			B						
7	CC Early Term	60	lb/a		32.963 -	23.1 -	25.0 -			
7	Roundup PowerMAX	32	fl oz/a	A						
7	Ammonium Sulfate			A						
7	Late Soy									
7	No PRE									
7	Liberty	32	fl oz/a	B						
7	Roundup PowerMAX	32	fl oz/a	B						
7	Ammonium Sulfate			B						
8	CC Early Term	60	lb/a		29.023 -	23.3 -	25.2 -			
8	Roundup PowerMAX	32	fl oz/a	A						
8	Ammonium Sulfate			A						
8	Late Soy									
8	Fierce EZ	6	fl oz/a	B						
8	Liberty	32	fl oz/a	B						
8	Roundup PowerMAX	32	fl oz/a	B						
8	Ammonium Sulfate			B						
9	CC Late Term	60	lb/a					127.155 -	46.5 -	63.9 -
9	Early soy									
9	No PRE									
9	Liberty	32	fl oz/a	B						
9	Roundup PowerMAX	32	fl oz/a	B						
9	Ammonium Sulfate			B						
10	CC Late Term	60	lb/a					100.175 -	43.0 -	64.2 -
10	Early soy									
10	Fierce EZ	6	fl oz/a	B						
10	Liberty	32	fl oz/a	B						
10	Roundup PowerMAX	32	fl oz/a	B						
10	Ammonium Sulfate			B						

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Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	1*	2*	3*	4*	5*	6*
	Pest Type				O, Other	O, Other	O, Other	O, Other	O, Other	
	Pest Name									
	Crop Type, Code				C, SECCW	C, SECCW	C, SECCW	C, SECCW	C, SECCW	C, SECCW
	BBCH Scale				BCER	BCER	BCER	BCER	BCER	BCER
	Crop Scientific Name				Secale cereale	Secale cereale	Secale cereale	Secale cereale	Secale cereale	Secale cereale
	Crop Name				Winter rye	Winter rye	Winter rye	Winter rye	Winter rye	Winter rye
	Rating Date				Apr-22-2022	Apr-22-2022	Apr-22-2022	May-24-2022	May-24-2022	May-24-2022
	Rating Type				Biomass (3)	Height (5)	Zadok's(5)	Biomass (3)	Height (5)	Zadok's(5)
	Rating Unit/Min/Max				/ft2, -, -	per plot, -, -	per plot, -, -	/ft2, -, -	per plot, -, -	per plot, -, -
	Number of Subsamples				1	5	5	1	5	5
	Assessed By				Per Treatment			Per Treatment		
	Data Entry Date				May-4-2022	May-4-2022	May-4-2022	Jun-10-2022	May-25-2022	May-25-2022
	Rating Timing				Early Plant	Early Plant	Early Plant	Late Plant	Late Plant	
	Days After First/Last Applic.				0, 0	0, 0	0, 0	32, 26	32, 26	32, 26
	Trt-Eval Interval				Early Term	Early Term	Early Term			
	Days After Emergence				-46 DE-2	-46 DE-2	178 DE-3	-14 DE-2	-14 DE-2	210 DE-3
	ARM Action Codes									
	Number of Decimals									
11	CC Late Term	60	lb/a					131.380	- 46.0	- 64.3
11	Late Soy									
11	No PRE									
11	Liberty	32	fl oz/a	B						
11	Roundup PowerMAX	32	fl oz/a	B						
11	Ammonium Sulfate			B						
12	CC Late Term	60	lb/a					90.783	- 43.7	- 64.1
12	Late Soy									
12	Fierce EZ	6	fl oz/a	B						
12	Liberty	32	fl oz/a	B						
12	Roundup PowerMAX	32	fl oz/a	B						
12	Ammonium Sulfate			B						
	LSD P=.05				12.3779	3.66	1.82	68.3624	8.86	1.39
	Standard Deviation				7.7382	2.29	1.14	42.7375	5.54	0.87
	CV				28.15	10.08	4.56	38.03	12.36	1.36
	Grand Mean				27.4844	22.71	24.93	112.3731	44.80	64.10
	Levene's F^				4.143	0.639	6.00	0.381	10.302	0.79
	Levene's Prob(F)				0.031*	0.605	0.01*	0.768	0.001*	0.523
	Rank X2				.	.	.	.	.	.
	P(Rank X2)				.	.	.	.	.	.
	Skewness^				-0.5019	0.1335	-0.6129	0.7792	0.4066	-0.5891
	Kurtosis^				-1.1293	-0.7895	0.2835	0.1784	-0.4715	-0.2193
	Analyzed as				RCB	RCB	RCB	RCB	RCB	RCB
	Replicate F				1.413	1.771	1.548	0.384	0.487	1.044
	Replicate Prob(F)				0.3016	0.2224	0.2685	0.7675	0.6999	0.4192
	Treatment F				1.411	0.435	0.167	0.872	0.382	0.202
	Treatment Prob(F)				0.3021	0.7331	0.9157	0.4907	0.7687	0.8926

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Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	7*	8*	9*	10*	11
	Pest Type				O, Other	O, Other	W, Weed	W, Weed	W, Weed
	Pest Name						Amaranth Pigweed	Amaranth Pigweed	Amaranth Pigweed
	Crop Type, Code				C, SECCW	C, SECCW			
	BBCH Scale				BCER	BCER			
	Crop Scientific Name				Secale cereale	Secale cereale			
	Crop Name				Winter rye	Winter rye			
	Rating Date					Oct-11-2022			
	Rating Type				Biomass (3)	Biomass (3)	Counts (2)	Height (10)	Biomass (2)
	Rating Unit/Min/Max				/ft2, -, -	/ft2, -, -	/m2, -, -	per plot, -, -	/m2, -, -
	Number of Subsamples				1	1	2	10	1
	Assessed By				Per Treatment	Per Treatment	Per plot	Per plot	Per plot
	Data Entry Date				Oct-17-2022	Oct-17-2022	Oct-17-2022	Oct-17-2022	Oct-17-2022
	Rating Timing				@ POST	@ harvest	@ POST	@ POST	@ harvest
	Days After First/Last Applic.					172, 105			
	Trt-Eval Interval								
	Days After Emergence					126 DE-2			
	ARM Action Codes								
	Number of Decimals								
1	No CC						522.9	ab 9.3	-
1	Early soy								
1	No PRE								
1	Liberty	32	fl oz/a	B					
1	Roundup PowerMAX	32	fl oz/a	B					
1	Ammonium Sulfate			B					
2	No CC						336.3	ab 4.2	-
2	Early soy								
2	Fierce EZ	6	fl oz/a	B					
2	Liberty	32	fl oz/a	B					
2	Roundup PowerMAX	32	fl oz/a	B					
2	Ammonium Sulfate			B					
3	No CC						427.6	ab 6.3	- 8.770
3	Late Soy								
3	No PRE								
3	Liberty	32	fl oz/a	B					
3	Roundup PowerMAX	32	fl oz/a	B					
3	Ammonium Sulfate			B					
4	No CC						120.6	b 6.7	-
4	Late Soy								
4	Fierce EZ	6	fl oz/a	B					
4	Liberty	32	fl oz/a	B					
4	Roundup PowerMAX	32	fl oz/a	B					
4	Ammonium Sulfate			B					

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Pest Type		O, Other	O, Other	W, Weed	W, Weed	W, Weed
Pest Name				Amaranth Pigweed	Amaranth Pigweed	Amaranth Pigweed
Crop Type, Code		C, SECCW	C, SECCW			
BBCH Scale		BCER	BCER			
Crop Scientific Name		Secale cereale	Secale cereale			
Crop Name		Winter rye	Winter rye			
Rating Date			Oct-11-2022			
Rating Type		Biomass (3)	Biomass (3)	Counts (2)	Height (10)	Biomass (2)
Rating Unit/Min/Max		/ft2, -, -	/ft2, -, -	/m2, -, -	per plot, -, -	/m2, -, -
Number of Subsamples		1	1	2	10	1
Assessed By		Per Treatment	Per Treatment	Per plot	Per plot	Per plot
Data Entry Date		Oct-17-2022	Oct-17-2022	Oct-17-2022	Oct-17-2022	Oct-17-2022
Rating Timing		@ POST	@ harvest	@ POST	@ POST	@ harvest
Days After First/Last Applic.			172, 105			
Trt-Eval Interval						
Days After Emergence			126 DE-2			
ARM Action Codes						
Number of Decimals						

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	7*	8*	9*	10*	11
5	CC Early Term	60	lb/a				527.9 ab	7.1 -	
5	Roundup PowerMAX	32	fl oz/a	A					
5	Ammonium Sulfate			A					
5	Early soy								
5	No PRE								
5	Liberty	32	fl oz/a	B					
5	Roundup PowerMAX	32	fl oz/a	B					
5	Ammonium Sulfate			B					
6	CC Early Term	60	lb/a				186.9 b	4.8 -	
6	Roundup PowerMAX	32	fl oz/a	A					
6	Ammonium Sulfate			A					
6	Early soy								
6	Fierce EZ	6	fl oz/a	B					
6	Liberty	32	fl oz/a	B					
6	Roundup PowerMAX	32	fl oz/a	B					
6	Ammonium Sulfate			B					
7	CC Early Term	60	lb/a				905.8 a	9.8 -	32.140
7	Roundup PowerMAX	32	fl oz/a	A					
7	Ammonium Sulfate			A					
7	Late Soy								
7	No PRE								
7	Liberty	32	fl oz/a	B					
7	Roundup PowerMAX	32	fl oz/a	B					
7	Ammonium Sulfate			B					
8	CC Early Term	60	lb/a				37.9 b	8.1 -	32.200
8	Roundup PowerMAX	32	fl oz/a	A					
8	Ammonium Sulfate			A					
8	Late Soy								
8	Fierce EZ	6	fl oz/a	B					
8	Liberty	32	fl oz/a	B					
8	Roundup PowerMAX	32	fl oz/a	B					
8	Ammonium Sulfate			B					
9	CC Late Term	60	lb/a		140.795 -	50.465 -	34.5 b	7.6 -	25.980
9	Early soy								
9	No PRE								
9	Liberty	32	fl oz/a	B					
9	Roundup PowerMAX	32	fl oz/a	B					
9	Ammonium Sulfate			B					
10	CC Late Term	60	lb/a		79.085 -	41.643 -	235.4 b	6.9 -	8.230
10	Early soy								
10	Fierce EZ	6	fl oz/a	B					
10	Liberty	32	fl oz/a	B					
10	Roundup PowerMAX	32	fl oz/a	B					
10	Ammonium Sulfate			B					

The Ohio State University

USB Green Planting FY21

Trial ID: USB Green Planting FY21 Cooperator Trial ID:
Protocol ID: USB Green Planting FY21 Location: Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Rodrigo Werle

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	7*	8*	9*	10*	11
	Pest Type				O, Other	O, Other	W, Weed	W, Weed	W, Weed
	Pest Name						Amaranth Pigweed	Amaranth Pigweed	Amaranth Pigweed
	Crop Type, Code				C, SECCW	C, SECCW			
	BBCH Scale				BCER	BCER			
	Crop Scientific Name				Secale cereale	Secale cereale			
	Crop Name				Winter rye	Winter rye			
	Rating Date					Oct-11-2022			
	Rating Type				Biomass (3)	Biomass (3)	Counts (2)	Height (10)	Biomass (2)
	Rating Unit/Min/Max				/ft2, -, -	/ft2, -, -	/m2, -, -	per plot, -, -	/m2, -, -
	Number of Subsamples				1	1	2	10	1
	Assessed By				Per Treatment	Per Treatment	Per plot	Per plot	Per plot
	Data Entry Date				Oct-17-2022	Oct-17-2022	Oct-17-2022	Oct-17-2022	Oct-17-2022
	Rating Timing				@ POST	@ harvest	@ POST	@ POST	@ harvest
	Days After First/Last Applic.					172, 105			
	Trt-Eval Interval								
	Days After Emergence					126 DE-2			
	ARM Action Codes								
	Number of Decimals								
11	CC Late Term	60	lb/a		128.885 -	47.433 -	151.1 b	6.4 -	87.690
11	Late Soy								
11	No PRE								
11	Liberty	32	fl oz/a	B					
11	Roundup PowerMAX	32	fl oz/a	B					
11	Ammonium Sulfate			B					
12	CC Late Term	60	lb/a		101.283 -	38.215 -	37.0 b	8.9 -	160.930
12	Late Soy								
12	Fierce EZ	6	fl oz/a	B					
12	Liberty	32	fl oz/a	B					
12	Roundup PowerMAX	32	fl oz/a	B					
12	Ammonium Sulfate			B					
	LSD P=.05				83.9000	36.5325	446.21	4.20	.
	Standard Deviation				52.4510	22.8387	310.17	2.91	.
	CV				46.62	51.39	105.63	40.72	.
	Grand Mean				112.5119	44.4388	293.65	7.15	16.9918
	Levene's F^				0.925	0.325	4.401	1.097	.
	Levene's Prob(F)				0.458	0.807	0.00*	0.393	.
	Rank X2				.	.	.	.	.
	P(Rank X2)				.	.	.	.	.
	Skewness^				0.1352	0.02	0.3505	0.2946	.
	Kurtosis^				-0.1032	-0.9768	0.4405	-0.8287	.
	Analyzed as				RCB	RCB	RCB	RCB	SPP
	Replicate F				0.536	0.238	0.360	0.153	
	Replicate Prob(F)				0.6690	0.8679	0.7822	0.9271	
	Treatment F				1.120	0.235	2.893	1.350	
	Treatment Prob(F)				0.3911	0.8699	0.0089	0.2453	

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USB Green Planting FY21

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Protocol ID: USB Green Planting FY21 Location: Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Rodrigo Werle

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	12*	13	14*	15*
	Pest Type				W, Weed	W, Weed	W, Weed	
	Pest Name				Amaranth Pigweed	Amaranth Pigweed	Amaranth Pigweed	
	Crop Type, Code							C, GLXMA
	BBCH Scale							BSOY
	Crop Scientific Name							Glycine max
	Crop Name							Soybean
	Rating Date				Oct-11-2022	Oct-11-2022	Oct-11-2022	Oct-11-2022
	Rating Type				Counts (2)	Height (10)	Control	Stand count
	Rating Unit/Min/Max				/m2, -, -	cm, -, -	%, 0, 100	m, -, -
	Number of Subsamples				2	10	1	2
	Assessed By				Per plot	Per plot	Per plot	row 2 & 3
	Data Entry Date				Oct-17-2022	Oct-17-2022	Oct-17-2022	Oct-13-2022
	Rating Timing				@ harvest	@ harvest	@ harvest	@ harvest
	Days After First/Last Applic.				172, 105	172, 105	172, 105	172, 105
	Trt-Eval Interval							
	Days After Emergence				148 DE-1	148 DE-1	148 DE-1	148 DE-1
	ARM Action Codes							
	Number of Decimals							
1	No CC				0.0 -		100.0 -	36.8 -
1	Early soy							
1	No PRE							
1	Liberty	32	fl oz/a	B				
1	Roundup PowerMAX	32	fl oz/a	B				
1	Ammonium Sulfate			B				
2	No CC				0.0 -		100.0 -	35.3 -
2	Early soy							
2	Fierce EZ	6	fl oz/a	B				
2	Liberty	32	fl oz/a	B				
2	Roundup PowerMAX	32	fl oz/a	B				
2	Ammonium Sulfate			B				
3	No CC				0.3 -	102.5	97.5 -	33.0 -
3	Late Soy							
3	No PRE							
3	Liberty	32	fl oz/a	B				
3	Roundup PowerMAX	32	fl oz/a	B				
3	Ammonium Sulfate			B				
4	No CC				0.0 -		100.0 -	39.0 -
4	Late Soy							
4	Fierce EZ	6	fl oz/a	B				
4	Liberty	32	fl oz/a	B				
4	Roundup PowerMAX	32	fl oz/a	B				
4	Ammonium Sulfate			B				

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USB Green Planting FY21

Trial ID: USB Green Planting FY21 Cooperator Trial ID:
Protocol ID: USB Green Planting FY21 Location: Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Rodrigo Werle

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	12*	13	14*	15*
	Pest Type				W, Weed	W, Weed	W, Weed	
	Pest Name				Amaranth Pigweed	Amaranth Pigweed	Amaranth Pigweed	
	Crop Type, Code							C, GLXMA
	BBCH Scale							BSOY
	Crop Scientific Name							Glycine max
	Crop Name							Soybean
	Rating Date				Oct-11-2022	Oct-11-2022	Oct-11-2022	Oct-11-2022
	Rating Type				Counts (2)	Height (10)	Control	Stand count
	Rating Unit/Min/Max				/m2, -, -	cm, -, -	%, 0, 100	m, -, -
	Number of Subsamples				2	10	1	2
	Assessed By				Per plot	Per plot	Per plot	row 2 & 3
	Data Entry Date				Oct-17-2022	Oct-17-2022	Oct-17-2022	Oct-13-2022
	Rating Timing				@ harvest	@ harvest	@ harvest	@ harvest
	Days After First/Last Applic.				172, 105	172, 105	172, 105	172, 105
	Trt-Eval Interval							
	Days After Emergence				148 DE-1	148 DE-1	148 DE-1	148 DE-1
	ARM Action Codes							
	Number of Decimals							
5	CC Early Term	60	lb/a		0.0 -		100.0 -	32.3 -
5	Roundup PowerMAX	32	fl oz/a	A				
5	Ammonium Sulfate			A				
5	Early soy							
5	No PRE							
5	Liberty	32	fl oz/a	B				
5	Roundup PowerMAX	32	fl oz/a	B				
5	Ammonium Sulfate			B				
6	CC Early Term	60	lb/a		0.0 -		100.0 -	31.0 -
6	Roundup PowerMAX	32	fl oz/a	A				
6	Ammonium Sulfate			A				
6	Early soy							
6	Fierce EZ	6	fl oz/a	B				
6	Liberty	32	fl oz/a	B				
6	Roundup PowerMAX	32	fl oz/a	B				
6	Ammonium Sulfate			B				
7	CC Early Term	60	lb/a		0.5 -	127.7	95.0 -	35.8 -
7	Roundup PowerMAX	32	fl oz/a	A				
7	Ammonium Sulfate			A				
7	Late Soy							
7	No PRE							
7	Liberty	32	fl oz/a	B				
7	Roundup PowerMAX	32	fl oz/a	B				
7	Ammonium Sulfate			B				
8	CC Early Term	60	lb/a		0.1 -	158.0	98.3 -	38.0 -
8	Roundup PowerMAX	32	fl oz/a	A				
8	Ammonium Sulfate			A				
8	Late Soy							
8	Fierce EZ	6	fl oz/a	B				
8	Liberty	32	fl oz/a	B				
8	Roundup PowerMAX	32	fl oz/a	B				
8	Ammonium Sulfate			B				
9	CC Late Term	60	lb/a		0.1 -	115.0	97.5 -	19.3 -
9	Early soy							
9	No PRE							
9	Liberty	32	fl oz/a	B				
9	Roundup PowerMAX	32	fl oz/a	B				
9	Ammonium Sulfate			B				
10	CC Late Term	60	lb/a		0.1 -	157.0	97.5 -	30.8 -
10	Early soy							
10	Fierce EZ	6	fl oz/a	B				
10	Liberty	32	fl oz/a	B				
10	Roundup PowerMAX	32	fl oz/a	B				
10	Ammonium Sulfate			B				

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USB Green Planting FY21

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Protocol ID: USB Green Planting FY21 Location: Trial Year: 2020
Project ID: Project ID 2: Project ID 3:
Study Director: Sponsor Contact:
Investigator (Creator): Rodrigo Werle

Trt No.	Treatment Name	Rate	Rate Unit	Appl Code	12*	13	14*	15*
	Pest Type				W, Weed	W, Weed	W, Weed	
	Pest Name				Amaranth Pigweed	Amaranth Pigweed	Amaranth Pigweed	
	Crop Type, Code							C, GLXMA
	BBCH Scale							BSOY
	Crop Scientific Name							Glycine max
	Crop Name							Soybean
	Rating Date				Oct-11-2022	Oct-11-2022	Oct-11-2022	Oct-11-2022
	Rating Type				Counts (2)	Height (10)	Control	Stand count
	Rating Unit/Min/Max				/m2, -, -	cm, -, -	%, 0, 100	m, -, -
	Number of Subsamples				2	10	1	2
	Assessed By				Per plot	Per plot	Per plot	row 2 & 3
	Data Entry Date				Oct-17-2022	Oct-17-2022	Oct-17-2022	Oct-13-2022
	Rating Timing				@ harvest	@ harvest	@ harvest	@ harvest
	Days After First/Last Applic.				172, 105	172, 105	172, 105	172, 105
	Trt-Eval Interval							
	Days After Emergence				148 DE-1	148 DE-1	148 DE-1	148 DE-1
	ARM Action Codes							
	Number of Decimals							
11	CC Late Term	60	lb/a		4.1 -	88.3	72.5 -	26.3 -
11	Late Soy							
11	No PRE							
11	Liberty	32	fl oz/a	B				
11	Roundup PowerMAX	32	fl oz/a	B				
11	Ammonium Sulfate			B				
12	CC Late Term	60	lb/a		2.3 -	82.4	75.0 -	27.3 -
12	Late Soy							
12	Fierce EZ	6	fl oz/a	B				
12	Liberty	32	fl oz/a	B				
12	Roundup PowerMAX	32	fl oz/a	B				
12	Ammonium Sulfate			B				
	LSD P=.05				3.85	.	29.86	14.43
	Standard Deviation				2.68	.	20.76	10.03
	CV				428.03	.	21.98	31.3
	Grand Mean				0.63	37.38	94.44	32.04
	Levene's F^				0.884	.	0.967	2.594
	Levene's Prob(F)				0.564	.	0.492	0.015*
	Rank X2				.	.	.	.
	P(Rank X2)				.	.	.	.
	Skewness^				2.8145*	.	-2.5182*	-0.5815
	Kurtosis^				13.6287*	.	10.107*	1.095
	Analyzed as				RCB	SPP	RCB	RCB
	Replicate F				0.726		0.541	2.146
	Replicate Prob(F)				0.5439		0.6578	0.1132
	Treatment F				0.902		0.892	1.279
	Treatment Prob(F)				0.5488		0.5574	0.2788

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USB Green Planting FY21

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Pest Type
O, Other = Other (animal or nematode)
W, Weed = Weed or volunteer crop
Crop Type, Code
C = EPPO species (Bayer) codes
SECCW, BCER, Secale cereale, Winter rye = US
GLXMA, BSOY, Glycine max, Soybean = US
Rating Unit/Min/Max
/ft2, , = per square foot
/m2, , = per square meter
cm, , = centimeter
%, 0, 100 = percent
m, , = meter