

The Ohio State University

Preplant "burndown" weed control programs using Assure II

Trial ID: 22ASSUREII Cooperator Trial ID:
 Protocol ID: 22C01H023 Location: Trial Year: 2022
 Project ID: 023 Project ID 2: Project ID 3:
 Study Director: Joe Bruce Sponsor Contact:
 Investigator (Creator): Dr. Mark M. Loux

General Trial Information

Study Director: Joe Bruce Title: Technical Service Manager

Discipline: H herbicide
 Status: E established Usage/Type: DEV Development/Registration
 ARM Trial Created On: Mar-25-2022 Planned Completion Date: Aug-1-2022

Trial Location

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

Conducted Under GLP: No
 Conducted Under GEP: No
 None

Contacts

Role: STYDIR study director
 Study Director: Joe Bruce Title: Technical Service Manager
 Organization: AMVAC Chemical Corporation
 Address 1: 44 Waterford Ln Mobile No.: 224-319-2000
 Country: USA United States E-mail: joeb@amvac.com
 City: Glen Carbon State/Prov.: IL

Crop Description

Crop 1: CZEAMX Zea mays Corn BBCH Scale: BCOR
 Stage Scale: BBCH
 Attributes: No crop planting required

Crop 2: CGLXMA Glycine max Soybean BBCH Scale: BSOY
 Stage Scale: BBCH
 Attributes: No crop planting required

Crop 3: CTRZAS Triticum aestivum Spring wheat BBCH Scale: BCER
 Stage Scale: BBCH
 Attributes: No crop planting required

Crop 4: CHORVS Hordeum vulgare Spring barley BBCH Scale: BCER
 Stage Scale: BBCH
 Attributes: No crop planting required

Pest Description

Pest 1 Type: W Code: TRZSS Triticum sp.
 Common Name: common wheat Stage Scale: BBCH

Site and Design

Treated Plot Width: 10 FT Site Type: FIELD field
 Treated Plot Length: 30 FT Experimental Unit: 15 ROW row
 Treated Plot Area: 300.0 FT² Tillage Type: NOTILL no-till
 Replications: 3 Treatments: 10 Plots: 30 Study Design: RACOB Randomized Complete Block (RCB)

Previous
 No. Crop Year
 1. SOYBEAN 2021

Field Prep./Maintenance:

Soil Description

Description Name: Western Branch C3
 % OM: 1.6 Texture: SIL silt loam
 Soil Name: Crosby
 Fert. Level: G good
 pH: 6.4 CEC: 13
 Soil Drainage: G good

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Application Description

	A	B
Application Date	Apr-20-2022	Apr-22-2022
Appl. Start Time	10:00 AM	10:00 AM
Appl. Stop Time	10:30 AM	10:15 AM
Application Method	SPRAY	SPRAY
Application Timing	PREPLA	PREPLA
Application Placement	BROADC	BROADC
Applied By	Dobbels	Dobbels
Appl. Entry Date	Apr-20-2022	May-2-2022
Air Temperature Start, Stop	45, 47 F	58, 58 F
% Relative Humidity Start, Stop	50, 51	73, 73
Wind Velocity+Dir. Start	8 MPH, S	4 MPH, W
Wind Velocity+Dir. Stop	9 MPH, S	4 MPH, W
Wind Velocity+Dir. Max	10 MPH, S	4 MPH, W
Wet Leaves (Y/N)	N, no	N, no
Soil Temperature	41 F	50 F
Soil Moisture	SLIWET	DRY
Soil Surface Condition	MEDTRA	MEDTRA
% Cloud Cover	20	80
Next Moisture Occurred On	Apr-21-2022	Apr-22-2022
Time to Next Moisture	1.0 DAY	3.5 HR
Moisture 6 Hours after Appl.	0 IN	0.01 IN
Moisture 1 Week after Appl.	0.15 IN	0.04 IN

Protocol Application Directions:

Water Volume and Source: Apply at 15 GPA. If water is known to have mineral content, report water hardness.

Application Timing: Make applications as follows:

PREPLA -

Application code A: prior to crop planting **before grass weeds exceed 6" height.**

Application code B: apply 1-2 days after Application code A

Please record following information in **SITE DESCRIPTION** sections:

Crop/Weed Information: weed growth stage; average, minimum and maximum weed height, approximate weed densities at application.

Application details: Date, time, sprayer type, GPA, PSI, nozzle type and orifice size.

Use a spray nozzle which produces medium to coarse size droplets (approximate VMD range of 250 to 400 microns). **Do not use TeeJet AI, AIXR, TTI spray tips or any tips that produce very coarse (VC), extremely coarse (XC), or ultra coarse (UC) spray droplets.**

Environmental Conditions: Air temp, wind speed & direction, humidity, & percent cloud cover at application.

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale	ZEAMX, BCOR	ZEAMX, BCOR
Crop 2 Code, BBCH Scale	GLXMA, BSOY	GLXMA, BSOY
Crop 3 Code, BBCH Scale	TRZAS, BCER	TRZAS, BCER
Crop 4 Code, BBCH Scale	HORVS, BCER	HORVS, BCER

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale	TRZSS, W	BBCH TRZSS, W, BBCH
Stage Majority, Percent	23, 95	
Stage Minimum, Percent	22, 05	
Stage Maximum, Percent	23, 95	
Height Average	8 IN	
Height Minimum, Maximum	6, 9	

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Application Equipment

	A	B
Appl. Equipment	10 Foot TT	10 Foot TT
Equipment Type	BACCAI	BACCAI
Operation Pressure	44 PSI	44 PSI
Nozzle Model	TT 11015	TT 11015
Nozzle Type	TEEJTU	TEEJTU
Nozzle Tip Size, Color	015, GREEN	015, GREEN
Nozzle Spacing	18.0 IN	18.0 IN
Boom Length	10.0 FT	10.0 FT
Boom Height	20.0 IN	20.0 IN
Ground Speed	3 MPH	3 MPH
Carrier	WATER	WATER
Application Amount	15 GAL/AC	15 GAL/AC
Mix Overage	25.0 %	25.0 %
Mix Size	2.0 L	2.0 L
Propellant	COMAIR	COMAIR
Tank Mix (Y/N)	Y, yes	Y, yes

Protocol Equipment Comment:

Small plot backpack equipment preferred.

	W, Weed TRZAW	W, Weed TRZAW	W, Weed TRZAW
Pest Type	Triticum aestiv>	Triticum aestiv>	Triticum aestiv>
Pest Code	Winter wheat	Winter wheat	Winter wheat
Pest Scientific Name	Apr-27-2022	May-4-2022	May-11-2022
Pest Name	12:07 AM		
Rating Date	8	11	12
Rating Time	ZUSW001	ZUSW001	ZUSW001
SE Group No.	%Control	%Control	%Control
SE Name	PLANT, P	PLANT, -	PLANT, -
SE Description	CONTRO	CONTRO	CONTRO
Part Rated	%, 0, 100	%, 0, 100	%, 0, 100
Rating Type	NC	NC	NC
Rating Unit/Min/Max	1 PLOT	1 PLOT	1 PLOT
Calculation	1 PLOT	1 PLOT	1 PLOT
Sample Size	1	1	1
Collection Basis	May-3-2022	May-4-2022	May-11-2022
Reporting Basis	7, 5	14, 12	21, 19
Number of Subsamples	7 DA-A	14 DA-A	21 DA-A
Data Entry Date	AL		
Days After First/Last Applic.	0	0	0
Trt-Eval Interval			
ARM Action Codes			
Number of Decimals			

Trt Treatment	Rate	Unit	Appl Code	Appl Description	1* dAL	2*	3*
1 Untreated Check					0b	0e	0d
2 Assure II	0.055lb ai/a	A			0b	25bcd	53b
2 Crop Oil Concentrate	1% v/v	A					
2 2,4-D Ester	0.5lb ai/a	B		apply 1-2 days after Appl Code A			
3 Assure II	0.069lb ai/a	A			0b	22cd	50b
3 Crop Oil Concentrate	1% v/v	A					
3 2,4-D Ester	0.5lb ai/a	B		apply 1-2 days after Appl Code A			
4 Assure II	0.0825lb ai/a	A			0b	25bcd	50b
4 Crop Oil Concentrate	1% v/v	A					
4 2,4-D Ester	0.5lb ai/a	B		apply 1-2 days after Appl Code A			
5 Assure II	0.0825lb ai/a	A			1ab	25bcd	50b
5 2,4-D Ester	0.5lb ai/a	A					
5 Crop Oil Concentrate	1% v/v	A					
6 Assure II	0.0825lb ai/a	A			1ab	28bc	53b
6 2,4-D Ester	0.5lb ai/a	A					
6 Roundup PowerMax	0.188lb ae/a	A					
6 Glacier-EA	0.75% v/v	A					
6 Ammonium sulfate	2.5% v/v	A					

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Pest Type	W, Weed	W, Weed	W, Weed
Pest Code	TRZAW	TRZAW	TRZAW
Pest Scientific Name	Triticum aestiv>	Triticum aestiv>	Triticum aestiv>
Pest Name	Winter wheat	Winter wheat	Winter wheat
Rating Date	Apr-27-2022	May-4-2022	May-11-2022
Rating Time	12:07 AM		
SE Group No.	8	11	12
SE Name	ZUSW001	ZUSW001	ZUSW001
SE Description	%Control	%Control	%Control
Part Rated	PLANT, P	PLANT, -	PLANT, -
Rating Type	CONTRO	CONTRO	CONTRO
Rating Unit/Min/Max	%, 0, 100	%, 0, 100	%, 0, 100
Calculation	NC	NC	NC
Sample Size	1 PLOT	1 PLOT	1 PLOT
Collection Basis	1 PLOT	1 PLOT	1 PLOT
Reporting Basis	1 PLOT	1 PLOT	1 PLOT
Number of Subsamples	1	1	1
Data Entry Date	May-3-2022	May-4-2022	May-11-2022
Days After First/Last Applic.	7, 5	14, 12	21, 19
Trt-Eval Interval	7 DA-A	14 DA-A	21 DA-A
ARM Action Codes	AL		
Number of Decimals	0	0	0
Trt Treatment	Rate	Appl	Appl
No. Name	Rate Unit	Code	Description
		1*	2*
		dAL	3*
7 Assure II	0.0825 lb ai/a A	3ab	53b
7 2,4-D Ester	0.5 lb ai/a A		
7 Roundup PowerMax	0.28 lb ae/a A		
7 Glacier-EA	0.75 % v/v A		
7 Ammonium sulfate	2.5 % v/v A		
8 Assure II	0.0825 lb ai/a A	2ab	53b
8 2,4-D Ester	0.5 lb ai/a A		
8 Roundup PowerMax	0.375 lb ae/a A		
8 Glacier-EA	0.75 % v/v A		
8 Ammonium sulfate	2.5 % v/v A		
9 2,4-D Ester	0.5 lb ai/a A	3ab	40c
9 Roundup PowerMax	0.375 lb ae/a A		
9 NIS	0.25 % v/v A		
9 Ammonium sulfate	2.5 % v/v A		
10 2,4-D Ester	0.5 lb ai/a A	5a	73a
10 Roundup PowerMax	1.13 lb ae/a A		
10 NIS	0.25 % v/v A		
10 Ammonium sulfate	2.5 % v/v A		
LSD P=.05		2.2 - 3.9	5.2
Standard Deviation		0.2t	3.1
CV		80.64t	11.91
Grand Mean		0.3t	25.7
Levene's F^		0.568	0.853
Levene's Prob(F)		0.807	0.579
Rank X2		.	.
P(Rank X2)		.	.
Skewness^		0.3151	-0.0176
Kurtosis^		0.5638	1.3449
Replicate F		0.610	1.693
Replicate Prob(F)		0.5545	0.2120
Treatment F		4.291	48.554
Treatment Prob(F)		0.0042	0.0001

Pest Type

W, Weed = Weed or volunteer crop

Pest Code

TRZAW, Triticum aestivum, Winter wheat = US

Part Rated

PLANT = plant

P = Pest is Part Rated

Rating Type

CONTRO = control / burndown or knockdown

Rating Unit/Min/Max

%, 0, 100 = percent

Calculation

NC = no calculation

PLOT = total plot

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PLOT = total plot

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ARM Action Codes

AL = Automatic log transformation of X+1