

The Ohio State University

Primary/Core PRE soil residual trial

Trial ID: 22MAVYLD
 Protocol ID: VUSA2022V10494MD68.01 Location: Western Branch G-6 Cooperator Trial ID:
 Project ID: 201510 Project ID 2: Project ID 3: Trial Year: 2022
 Study Director: Sponsor Contact:
 Investigator (Creator): Dr. Mark M. Loux

Status: E established
 ARM Trial Created On: Mar-29-2022 Reliability: 1 usable data
 Initiation Date: May-1-2022

Trial Location

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

Latitude of LL Corner °: 39.85943 N
 Longitude of LL Corner °: -83.67471 W
 Altitude of LL Corner: 1086.00 FT

Conducted Under GLP: No
 Conducted Under GEP: No Study Rules: Default
 None

| No. | Guideline | Discipline | Description |
|-----|--------------|------------|--|
| 1. | ADM-C-PUB CO | | Confidentiality - Public Trial - No Secrecy Agreement Required |

Crop Description

| | | | |
|-----------|--|---|------------------|
| Crop 1: C | ZEAMX Zea mays | Corn | BBCH Scale: BCOR |
| | Entry Date: May-3-2022 | Stage Scale: BBCH | |
| | Variety: Seed Consultants SC1122Q | | |
| | Attributes: Glyphosate-R, Glufosinate-R | | |
| | Planting Date: May-2-2022 | Seed Size: 1826 S/LB | |
| | Depth: 2 IN | Planting Rate: 32097 S/A | |
| | Rows per Plot: 4 | Planting Method: PLANTD planted | |
| | Row Spacing: 30 IN | Planting Equipment: FPP finger pickup planter | |
| | Soil Temperature: 52 F | Seed Bed: MEDIUM medium | |
| | Emergence Date: May-16-2022 | Soil Moisture: DRY dry | |
| | Harvest Date: Oct-11-2022 | Harvest Equipment: Kincaid 8XP | |
| | Moisture Meter: Harvest Master | Harvested Width: 5 FT | |
| | % Standard Moisture: 15.5 | Harvested Length: 30 FT | |
| | Weighing Equipment: Harvest Master HM800 | | |

Pest Description

| | | | |
|----------------|-------------------------------------|------------------------|-------------------------|
| Pest 1 Type: W | Code: SETFA | Setaria faberi | Entry Date: Jul-15-2022 |
| | Common Name: Giant foxtail | | Stage Scale: BBCH |
| Pest 2 Type: W | Code: SETLU | Setaria pumila | Entry Date: Jul-15-2022 |
| | Common Name: foxtail, yellow | | Stage Scale: BBCH |
| Pest 3 Type: W | Code: ECHCG | Echinochloa crus-galli | Entry Date: Jul-15-2022 |
| | Common Name: common barnyardgrass | | Stage Scale: BBCH |
| Pest 4 Type: W | Code: AMBTR | Ambrosia trifida | Entry Date: Jul-15-2022 |
| | Common Name: Giant ragweed | | Stage Scale: BBCH |
| Pest 5 Type: W | Code: CHEAL | Chenopodium album | Entry Date: Jul-15-2022 |
| | Common Name: common lambsquarters | | Stage Scale: BBCH |
| Pest 6 Type: W | Code: ABUTH | Abutilon theophrasti | Entry Date: Jul-15-2022 |
| | Common Name: velvetleaf | | Stage Scale: BBCH |
| Pest 7 Type: W | Code: IPOHE | Ipomoea hederacea | Entry Date: Jul-15-2022 |
| | Common Name: ivy-leaf morning glory | | Stage Scale: BBCH |

Site and Design

| | |
|--|---|
| Treated Plot Width: 6.67 FT | Site Type: FIELD field |
| Treated Plot Length: 30 FT | Experimental Unit: 1 PLOT plot |
| Treated Plot Area: 200.1 FT ² | Tillage Type: CONTIL conventional-till |
| Replications: 3 | Treatments: 8 Plots: 32 |
| | Study Design: RACOB Randomized Complete Block (RCB) |

| No. | Crop | Year |
|-----|---------|------|
| 1. | SOYBEAN | 2021 |

Soil Description

| | |
|-----------------------|-------------------------------|
| Description Name: G-6 | Texture: SICL silty clay loam |
| % Sand: 32 | Soil Name: Kokomo |
| % Silt: 53 | Fert. Level: G good |
| % Clay: 15 | CEC: 14 |
| pH: 5.9 | |
| g o o d | |

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Application Description

| | A | B |
|---------------------------------|------------|-------------|
| Application Date | May-2-2022 | Jun-3-2022 |
| Appl. Start Time | 5:00 PM | 1:00 PM |
| Appl. Stop Time | 5:30 PM | 1:30 PM |
| Application Method | NONINC | SPRAY |
| Application Timing | PREPRE | POSPOS |
| Application Placement | BROSOI | BROADC |
| Applied By | Essman | Dobbels |
| Appl. Entry Date | May-3-2022 | Jul-15-2022 |
| Air Temperature Start, Stop | 71, 71 F | 67, 67 F |
| % Relative Humidity Start, Stop | 34, 34 | 52, 52 |
| Wind Velocity+Dir. Start | 9.5 MPH, W | 4 MPH, W |
| Wind Velocity+Dir. Stop | 9 MPH, W | 4 MPH, W |
| Wind Velocity+Dir. Max | 11 MPH, W | 4 MPH, W |
| Wet Leaves (Y/N) | N, no | N, no |
| Soil Temperature | 62 F | 65 F |
| Soil Moisture | DRY | DRY |
| Soil Surface Condition | MEDIUM | MEDIUM |
| % Cloud Cover | 33 | 33 |
| Next Moisture Occurred On | May-3-2022 | Jun-6-2022 |
| Time to Next Moisture | 14.0 HR | 3.0 DAY |
| Moisture 6 Hours after Appl. | 0 IN | 0 IN |
| Moisture 1 Week after Appl. | 2.09 IN | 1.08 IN |

Protocol Application Directions:

Two application per plot/Two application timings

Crop Stage At Each Application

| | A | B |
|-------------------------|-------------|-------------|
| Crop 1 Code, BBCH Scale | ZEAMX, BCOR | ZEAMX, BCOR |
| Days after Emergence | -14 | 18 |
| Stage Majority, Percent | | 15, 100 |
| Height Average | | 13 IN |
| Height Minimum, Maximum | | 12, 15 |

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Pest Stage At Each Application

| | A | B |
|--------------------------|----------------|----------------|
| Pest 1 Code, Type, Scale | SETFA, W, BBCH | SETFA, W, BBCH |
| Stage Majority, Percent | | 15, 80 |
| Stage Minimum, Percent | | 13, 20 |
| Stage Maximum, Percent | | 15, 80 |
| Height Average | | 4 IN |
| Height Minimum, Maximum | | 3, 6 |
| Density Average | | 125 PLA/M2 |
| Density Minimum, Maximum | | 25, 200 |
| Pest 2 Code, Type, Scale | SETLU, W, BBCH | SETLU, W, BBCH |
| Stage Majority, Percent | | 15, 80 |
| Stage Minimum, Percent | | 13, 10 |
| Stage Maximum, Percent | | 15, 80 |
| Height Average | | 3 IN |
| Height Minimum, Maximum | | 2, 5 |
| Density Average | | 25 PLA/M2 |
| Density Minimum, Maximum | | 1, 30 |
| Pest 3 Code, Type, Scale | ECHCG, W, BBCH | ECHCG, W, BBCH |
| Stage Majority, Percent | | 15, 80 |
| Stage Minimum, Percent | | 13, 10 |
| Stage Maximum, Percent | | 15, 80 |
| Height Average | | 4 IN |
| Height Minimum, Maximum | | 2, 6 |
| Density Average | | 30 PLA/M2 |
| Density Minimum, Maximum | | 15, 45 |
| Pest 4 Code, Type, Scale | AMBTR, W, BBCH | AMBTR, W, BBCH |
| Stage Majority, Percent | | 19, 60 |
| Stage Minimum, Percent | | 14, 20 |
| Stage Maximum, Percent | | 19, 60 |
| Height Average | | 6 IN |
| Height Minimum, Maximum | | 4, 10 |
| Density Average | | 5 PLA/M2 |
| Density Minimum, Maximum | | 2, 12 |
| Pest 5 Code, Type, Scale | CHEAL, W, BBCH | CHEAL, W, BBCH |
| Stage Majority, Percent | | 16, 80 |
| Stage Minimum, Percent | | 16, 80 |
| Stage Maximum, Percent | | 18, 10 |
| Height Average | | 4 IN |
| Height Minimum, Maximum | | 2, 5 |
| Density Average | | 12 PLA/M2 |
| Density Minimum, Maximum | | 8, 14 |
| Pest 6 Code, Type, Scale | ABUTH, W, BBCH | ABUTH, W, BBCH |
| Stage Majority, Percent | | 15, 80 |
| Stage Minimum, Percent | | 13, 10 |
| Stage Maximum, Percent | | 15, 80 |
| Height Average | | 3 IN |
| Height Minimum, Maximum | | 2, 5 |
| Density Average | | 3 PLA/M2 |
| Density Minimum, Maximum | | 0.33, 6 |
| Pest 7 Code, Type, Scale | IPOHE, W, BBCH | IPOHE, W, BBCH |
| Stage Majority, Percent | | 12, 80 |
| Stage Minimum, Percent | | 12, 80 |
| Stage Maximum, Percent | | 13, 10 |
| Height Average | | 2 IN |
| Height Minimum, Maximum | | 1, 3 |
| Density Average | | 3 PLA/M2 |
| Density Minimum, Maximum | | 0, 5 |

Application Equipment

| | A | B |
|----------------------------|-----------|-----------|
| Appl. Equipment | 6' TTI | Tractor |
| Equipment Type | BACCAI | SPRAYE |
| Operation Pressure | 44 PSI | 30 PSI |
| Nozzle Model | 1110015 | 11003 |
| Nozzle Type | TTI | TT |
| Nozzle Spacing | 18 IN | 20 IN |
| Boom Length | 6.67 FT | 10 FT |
| Boom Height | 20 IN | 20 FT |
| Ground Speed | 3 MPH | 3.8 MPH |
| Carrier | WATER | WATER |
| Water Hardness (ppm CaCO3) | 250 | |
| Application Amount | 15 GAL/AC | 15 GAL/AC |
| Mix Size | 1 L | 5 GAL |
| Spray pH | 7.8 | |
| Propellant | COMCO2 | PUMROL |
| Tank Mix (Y/N) | | Y, yes |

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| | | | | |
|-------------------------------|-------------|-------------|-------------|-------------|
| Pest Type | | | | |
| Pest Code | | | | |
| Pest Scientific Name | | | | |
| Pest Name | | | | |
| Crop Type, Code | C, ZEAMX | C, ZEAMX | C, ZEAMX | C, ZEAMX |
| BBCH Scale | BCOR | BCOR | BCOR | BCOR |
| Crop Scientific Name | Zea mays | Zea mays | Zea mays | Zea mays |
| Crop Name | Corn | Corn | Corn | Corn |
| Rating Date | Oct-11-2022 | Oct-11-2022 | Oct-11-2022 | Oct-11-2022 |
| Part Rated | | | | |
| Rating Type | WEIGHT | MOICON | YIELD | WEITES |
| Rating Unit/Min/Max | LBS, -, - | %, 0, 100 | BU, -, - | LBS, -, - |
| Sample Size | 1 PLOT | 1 QT | 1 A | 1 QT |
| Number of Subsamples | 1 | 1 | 1 | 1 |
| Data Entry Date | Oct-13-2022 | Oct-13-2022 | | Oct-13-2022 |
| Rating Timing | | | | |
| Days After First/Last Applic. | 162, 130 | 162, 130 | 162, 130 | 162, 130 |
| Trt-Eval Interval | | | | |
| Plant-Eval Interval | 162 DP-1 | 162 DP-1 | 162 DP-1 | 162 DP-1 |
| Days After Emergence | 148 DE-1 | 148 DE-1 | 148 DE-1 | 148 DE-1 |
| ARM Action Codes | | | TY1 | |
| Number of Decimals | | | 1 | |

| Trt Treatment No. Name | Rate | Appl Code | 32* | 33* | 34* | 35* |
|---------------------------------|----------------|-----------|---------|---------|--------|--------|
| 1 UTC | | | 48.270- | 17.95ab | 243.0- | 55.93- |
| 2 ROUNDUP POWER MAX 3(SALT) | 1 lb ai/a B | | 49.828- | 18.78a | 248.4- | 56.28- |
| 2 STATUS HERBICIDE | 2 oz/a B | | | | | |
| 2 INDUCE | 0.25 % v/v B | | | | | |
| 2 N PAK AMS | 6 % v/v B | | | | | |
| 3 ACURON HERBICIDE | 3 qt/a A | | 51.863- | 17.68b | 261.9- | 57.60- |
| 3 ROUNDUP POWER MAX 3(SALT) | 1 lb ai/a B | | | | | |
| 3 STATUS HERBICIDE | 2 oz/a B | | | | | |
| 3 INDUCE | 0.25 % v/v B | | | | | |
| 3 N PAK AMS | 6 % v/v B | | | | | |
| 4 BICEP II MAGNUM | 2.1 qt/a A | | 52.303- | 17.53b | 264.6- | 56.05- |
| 4 ROUNDUP POWER MAX 3(SALT) | 1 lb ai/a B | | | | | |
| 4 STATUS HERBICIDE | 2 oz/a B | | | | | |
| 4 INDUCE | 0.25 % v/v B | | | | | |
| 4 N PAK AMS | 6 % v/v B | | | | | |
| 5 RESICORE | 88 fl oz/a A | | 50.920- | 17.55b | 257.6- | 57.33- |
| 5 ROUNDUP POWER MAX 3(SALT) | 1 lb ai/a B | | | | | |
| 5 STATUS HERBICIDE | 2 oz/a B | | | | | |
| 5 INDUCE | 0.25 % v/v B | | | | | |
| 5 N PAK AMS | 6 % v/v B | | | | | |
| 6 V-10494 2.04 LBAI/GAL SC 2162 | 1 qt/a A | | 50.423- | 17.40b | 255.6- | 56.80- |
| 6 ROUNDUP POWER MAX 3(SALT) | 1 lb ai/a B | | | | | |
| 6 STATUS HERBICIDE | 2 oz/a B | | | | | |
| 6 INDUCE | 0.25 % v/v B | | | | | |
| 6 N PAK AMS | 6 % v/v B | | | | | |
| 7 V-10494 2.04 LBAI/GAL SC 2162 | 1 qt/a A | | 49.820- | 17.45b | 252.4- | 56.83- |
| 7 AATREX | 0.75 lb ai/a A | | | | | |
| 7 ROUNDUP POWER MAX 3(SALT) | 1 lb ai/a B | | | | | |
| 7 STATUS HERBICIDE | 2 oz/a B | | | | | |
| 7 INDUCE | 0.25 % v/v B | | | | | |
| 7 N PAK AMS | 6 % v/v B | | | | | |

Means followed by same letter or symbol do not significantly differ (P=0.05, Student-Newman-Keuls).
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

* Adjusted means

^ Calculated from residual.

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| Pest Type | | | | | | |
|-------------------------------|-------------|-------------|-------------|-------------|---------|---------|
| Pest Code | | | | | | |
| Pest Scientific Name | | | | | | |
| Pest Name | | | | | | |
| Crop Type, Code | C, ZEAMX | C, ZEAMX | C, ZEAMX | C, ZEAMX | | |
| BBCH Scale | BCOR | BCOR | BCOR | BCOR | | |
| Crop Scientific Name | Zea mays | Zea mays | Zea mays | Zea mays | | |
| Crop Name | Corn | Corn | Corn | Corn | | |
| Rating Date | Oct-11-2022 | Oct-11-2022 | Oct-11-2022 | Oct-11-2022 | | |
| Part Rated | | | | | | |
| Rating Type | WEIGHT | MOICON | YIELD | WEITES | | |
| Rating Unit/Min/Max | LBS, -, - | %, 0, 100 | BU, -, - | LBS, -, - | | |
| Sample Size | 1 PLOT | 1 QT | 1 A | 1 QT | | |
| Number of Subsamples | 1 | 1 | 1 | 1 | | |
| Data Entry Date | Oct-13-2022 | Oct-13-2022 | | Oct-13-2022 | | |
| Rating Timing | | | | | | |
| Days After First/Last Applic. | 162, 130 | 162, 130 | 162, 130 | 162, 130 | | |
| Trt-Eval Interval | | | | | | |
| Plant-Eval Interval | 162 DP-1 | 162 DP-1 | 162 DP-1 | 162 DP-1 | | |
| Days After Emergence | 148 DE-1 | 148 DE-1 | 148 DE-1 | 148 DE-1 | | |
| ARM Action Codes | TY1 | | | | | |
| Number of Decimals | 1 | | | | | |
| Trt Treatment | Rate | Appl | 32* | 33* | 34* | 35* |
| No. Name | Rate Unit | Code | | | | |
| 8 TRIVOLT SC | 0.6lb ai/a | A | 52.265- | 17.40b | 265.0- | 56.93- |
| 8 ROUNDUP POWER MAX 3(SALT) | 1lb ai/a | B | | | | |
| 8 STATUS HERBICIDE | 2oz/a | B | | | | |
| 8 INDUCE | 0.25% v/v | B | | | | |
| 8 N PAK AMS | 6% v/v | B | | | | |
| LSD P=.05 | | | 2.8169 | 0.849 | 13.99 | 1.086 |
| Standard Deviation | | | 1.9156 | 0.577 | 9.51 | 0.738 |
| CV | | | 3.78 | 3.26 | 3.71 | 1.3 |
| Grand Mean | | | 50.7113 | 17.716 | 256.08 | 56.716 |
| Levene's F^ | | | 1.044 | 0.908 | 1.02 | 3.342 |
| Levene's Prob(F) | | | 0.428 | 0.517 | 0.443 | 0.012* |
| Rank X2 | | | . | . | . | . |
| P(Rank X2) | | | . | . | . | . |
| Skewness^ | | | -0.4768 | -0.6741 | -0.5584 | -0.1689 |
| Kurtosis^ | | | -0.7094 | 0.1086 | -0.4217 | -0.3074 |
| Replicate F | | | 10.776 | 1.811 | 10.699 | 2.777 |
| Replicate Prob(F) | | | 0.0002 | 0.1761 | 0.0002 | 0.0665 |
| Treatment F | | | 2.170 | 2.592 | 2.727 | 2.599 |
| Treatment Prob(F) | | | 0.0802 | 0.0429 | 0.0353 | 0.0425 |

Crop Type, Code

C = EPPO species (Bayer) codes
 ZEAMX, BCOR, Zea mays, Corn = US

Rating Type

WEIGHT = weight
 MOICON = moisture content
 YIELD = yield
 WEITES = weight - test
 Rating Unit/Min/Max
 %, 0, 100 = percent
 BU, , = bushel

PLOT = total plot

QT = quart

A = acre

Plant-Eval Interval

162 DP-1 = 1 ZEAMX May-2-2022

ARM Action Codes

TY1 = $5.18571429 * [32] * (100 - [33]) / 84.5$

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

^Calculated from residual.