

Green plant

Trial ID: 19 Green plant
Protocol ID: 19 Green plant
Project ID:

Location:
Investigator: Alyssa Lamb
Study Director:
Sponsor Contact:

Trial Year: 2019

General Trial Information

Investigator: Dr. Mark M. Loux

Trial Status: E established

Trial Location

City: South Charleston **Country:** USA United States
State/Prov.: Ohio
Postal Code: 45368 **Climate Zone:** USWARM US Warm Continental

Conducted Under GLP: No

Conducted Under GEP: No

Investigator: Dr. Mark M. Loux

Crop Description

Crop 1: C GLXMA Glycine max Soybean **BBCH Scale:** BSOY
Variety: Pioneer 33A24X
Attributes: RR2X
Planting Date: May-16-2019 **Planting Rate:** 145000 S/A
Depth: 1.5 IN
Rows per Plot: 8 **Planting Method:** PLANTD planted
Row Spacing: 15 IN **Planting Equipment:** PP plot planter
Seed Bed: MEDTRA medium/trashy
Soil Temperature: 65 F **Soil Moisture:** SLIWET slightly wet, moist
Emergence Date: May-31-2019
Harvested Width: 6.25 FT
% Standard Moisture: 13 **Harvested Length:** 30 FT

Crop 2: C SECCW Secale cereale Winter rye **BBCH Scale:** BCER
Variety: VNS
Planting Date: Oct-10-2018
Depth: 0.75 IN
Row Spacing: 7.5 IN **Planting Method:** DRILLE drilled
Emergence Date: Oct-22-2018 **Planting Equipment:** PP plot planter

Pest Description

Pest 1 Type: W **Code:** LAMPU Lamium purpureum
Common Name: Purple deadnettle

Pest 2 Type: W **Code:** SENGL Packera glabella
Common Name: Cressleaf groundsel

Pest 3 Type: W **Code:** RANAB Ranunculus abortivus
Common Name: Smallflower buttercup

Pest 4 Type: W **Code:** VERPG Veronica peregrina
Common Name: Purslane speedwell

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 FT2 **Treatments:** 18 **Tillage Type:** NOTILL no-till
Replications: 4 **Study Design:** SPLPLO Split-Plot

Previous

No. Crop Year
1. Soybean 2018

Soil Description

Description Name: G-8
% Sand: 36 **% OM:** 2.4 **Texture:** L loam
% Silt: 47 **pH:** 6.2 **Soil Name:** Crosby
% Clay: 17 **CEC:** 13.4 **Fert. Level:** G good
Soil Drainage: F fair

Application Description

| | A | B | C | D | E |
|--|-------------|-------------|-------------|----------|-------------|
| Application Date | Apr-2-2019 | Apr-24-2019 | May-22-2019 | | Jun-27-2019 |
| Appl. Start Time | 1:35 PM | 9:00 AM | 10:00 AM | | 9:00 AM |
| Appl. Stop Time | 1:45 PM | 9:30 AM | 10:30 AM | | 9:15 AM |
| Interval to Prev. Appl. | | 22 DAYS | 28 DAYS | | 36 DAYS |
| Application Method | SPRAY | SPRAY | SPRAY | | SPRAY |
| Application Timing | EARLY APRIL | 7 EPP | 7 DAPL | 21 DAPL | POST |
| Application Placement | BROFOL | BROFOL | BROFOL | | BROFOL |
| Applied By | Dobbels | Loux | Lamb | | Lamb |
| Air Temperature Start, Stop | 52 52 F | 53 53 F | 71 71 F | | |
| % Relative Humidity Start, Stop | 31 31 | 68 68 | 67 67 | | |
| Wind Velocity+Dir. Start | 6 MPH SW | 2 MPH SSE | 9 MPH WSW | | |
| Wind Velocity+Dir. Stop | 6 MPH SW | 2 MPH SSE | 9 MPH WSW | | |
| Wind Velocity+Dir. Max | 6 MPH SW | 2 MPH SSE | 9 MPH WSW | | |
| Wet Leaves (Y/N) | N no | N no | N no | | |
| Soil Temperature | 43 F | 50 F | 68 F | | |
| Soil Moisture | wet | moist | moist | | |
| Soil Surface Condition | WET | MOIST | MOIST | | |
| % Cloud Cover | 20 | 90 | 40 | | |
| Next Moisture Occurred On | | | May-23-2019 | | |
| Time to Next Moisture | | | 22 HR | | |
| Moisture 6 Hours after Appl. | | | 0 IN | | |

Crop Stage At Each Application

| | A | | B | | C | | D | | E | |
|--------------------------------|----------|------|----------|------|----------|------|----------|------|----------|------|
| Crop 1 Code, BBCH Scale | GLXMA | BSOY | GLXMA | BSOY | GLXMA | BSOY | GLXMA | BSOY | GLXMA | BSOY |
| Days after Emergence | -59 | | -37 | | -9 | | | | 27 | |
| Crop 2 Code, BBCH Scale | SECCW | BCER | SECCW | BCER | SECCW | BCER | SECCW | BCER | SECCW | BCER |
| Days after Emergence | 162 | | 184 | | 212 | | | | 248 | |
| Stage Scale Used | BBCH | | | | BBCH | | | | | |
| Stage Majority, Percent | 24 | 100 | | | 65 | 100 | | | | |
| Average Diameter | 2 | IN | | | | | | | | |
| Height Average | 3 | in | | | 40 | in | | | | |
| Height Minimum, Maximum | 2.5 | 3 | | | 36 | 40 | | | | |

Pest Stage At Each Application

| | A | | B | | C | | D | | E | |
|---------------------------------|----------|-----|----------|---|----------|---|----------|---|----------|---|
| Pest 1 Code, Type, Scale | LAMPU | W | LAMPU | W | LAMPU | W | LAMPU | W | LAMPU | W |
| Stage Majority, Percent | 19 | 100 | | | | | | | | |
| Diameter | 3 | IN | | | | | | | | |
| Height Average | 2 | IN | | | | | | | | |
| Height Minimum, Maximum | 2 | 2.5 | | | | | | | | |
| Pest 2 Code, Type, Scale | SENGL | W | SENGL | W | SENGL | W | SENGL | W | SENGL | W |
| Stage Majority, Percent | 19 | 100 | | | | | | | | |
| Diameter | 4 | IN | | | | | | | | |
| Height Average | 3 | IN | | | | | | | | |
| Height Minimum, Maximum | 2 | 4 | | | | | | | | |
| Pest 3 Code, Type, Scale | RANAB | W | RANAB | W | RANAB | W | RANAB | W | RANAB | W |
| Stage Majority, Percent | 13 | 90 | | | | | | | | |
| Stage Minimum, Percent | 13 | 90 | | | | | | | | |
| Stage Maximum, Percent | 14 | 10 | | | | | | | | |
| Diameter | 2 | IN | | | | | | | | |
| Height Average | 2 | IN | | | | | | | | |
| Height Minimum, Maximum | 1 | 2 | | | | | | | | |
| Pest 4 Code, Type, Scale | VERPG | W | VERPG | W | VERPG | W | VERPG | W | VERPG | W |
| Stage Majority, Percent | 19 | 100 | | | | | | | | |
| Diameter | 3 | IN | | | | | | | | |
| Height Average | 1 | IN | | | | | | | | |
| Height Minimum, Maximum | 1 | 2 | | | | | | | | |

Application Equipment

| | A | B | C | D E |
|---------------------------|-----------|----------|----------|------------|
| Appl. Equipment | 10' AI XR | 10' TTI | 10' TTI | |
| Equipment Type | SPRBAC | SPRBAC | SPRBAC | |
| Operation Pressure | 42 PSI | 40 PSI | 40 PSI | |
| Nozzle Type | AI XR | TTI | TTI | |
| Nozzle Size | 110015 | 110015 | 110015 | |
| Nozzle Spacing | 18 IN | 18 IN | 18 IN | |
| Boom Length | 10 FT | 10 FT | 10 FT | |
| Boom Height | 20 IN | 20 IN | 20 IN | |
| Boom Flow Rate | IN | IN | IN | |
| Ground Speed | 3 MPH | 3 MPH | 3 MPH | |
| Carrier | WATER | WATER | WATER | |
| Application Amount | 15 GPA | 15 GPA | 15 GPA | |
| Mix Size | 3 GAL | 3 GAL | 3 GAL | |
| Propellant | COMCO2 | COMCO2 | CO2 | |

| Date | By | Notes |
|-------------|-------------|---|
| Jan-15-2019 | Alyssa Lamb | Automatically added by ARM: Trial Status updated to 'S' during trial creation. |
| Jan-15-2019 | Alyssa Lamb | Automatically added by ARM: Trial Status updated to 'E' when Planting Date entered. |

SE Definitions

1.

Crop Type, Code C

| | | | | | | | | | | |
|-------------------------------|---|-------------|---|-------------|---|-------------|---|-------------|---|------------|
| Crop Type, Code | C | GLXMA | C | GLXMA | C | GLXMA | C | GLXMA | C | - |
| BBCH Scale | | BSOY | | BSOY | | BSOY | | BSOY | | |
| Crop Scientific Name | | Glycine max | | Glycine max | | Glycine max | | Glycine max | | |
| Crop Name | | Soybean | | Soybean | | Soybean | | Soybean | | |
| Rating Date | | Oct-4-2019 | | Oct-4-2019 | | Oct-4-2019 | | Oct-4-2019 | | Oct-4-2019 |
| Rating Type | | WEIGHT | | MOICON | | YIELD | | WEITES | | |
| Rating Unit | | LBS | | % | | BU | | LBS | | |
| Sample Size | 1 | PLOT | | | | 1 | A | | | |
| Number of Subsamples | | 1 | | 1 | | 1 | | 1 | | 1 |
| Days After First/Last Applic. | | - 99 | | - 99 | | - 99 | | - 99 | | - 99 |
| Plant-Eval Interval | | 141 DP-1 | | 141 DP-1 | | 141 DP-1 | | 141 DP-1 | | 141 DP-1 |
| Days After Emergence | | 126 DE-1 | | 126 DE-1 | | 126 DE-1 | | 126 DE-1 | | 126 DE-1 |
| ARM Action Codes | | | | | | TY1 | | | | |
| Number of Decimals | | 2 | | 2 | | 1 | | 2 | | |

| Trt No. | Treatment Name | Appl Code | 1* | 2* | 3* | 4* | 5 |
|---------|--|-----------|---------|-----------|--------|---------|---|
| 1 | 90 lbs rye 1 1 week before plant 1 With residual | B | 17.38 - | 11.92 efg | 68.2 - | 54.75 - | |
| 2 | 90 lbs rye 2 1 week before plant 2 No residual | B | 17.43 - | 11.49 g | 68.6 - | 54.77 - | |
| 3 | 90 lbs rye 3 1 week after plant 3 With residual | C | 14.50 - | 12.14 d-g | 56.7 - | 52.66 - | |
| 4 | 90 lbs rye 4 1 week after plant 4 No residual | C | 16.87 - | 12.40 b-g | 65.8 - | 56.05 - | |
| 5 | 90 lbs rye 5 April sharpen, 1 week after 5 With residual | A | 17.45 - | 11.85 fg | 68.5 - | 55.27 - | |
| 6 | 90 lbs rye 6 April sharpen, 1 week after 6 No residual | A | 14.10 - | 12.76 a-f | 54.9 - | 55.81 - | |
| 7 | 45 lbs rye 7 1 week before plant 7 With residual | B | 17.48 - | 12.22 c-g | 68.4 - | 55.83 - | |
| 8 | 45 lbs rye 8 1 week before plant 8 No residual | B | 16.71 - | 12.27 c-g | 65.2 - | 56.49 - | |
| 9 | 45 lbs rye 9 1 week after plant 9 With residual | C | 16.04 - | 12.09 d-g | 62.8 - | 55.05 - | |
| 10 | 45 lbs rye 10 1 week after plant 10 No residual | C | 15.75 - | 12.29 c-g | 61.4 - | 55.70 - | |
| 11 | 45 lbs rye 11 April sharpen, 1 week after 11 With residual | A | 16.49 - | 11.90 efg | 64.7 - | 55.52 - | |
| 12 | 45 lbs rye 12 April sharpen, 1 week after 12 No residual | A | 16.65 - | 12.63 a-f | 64.7 - | 56.17 - | |
| 13 | Fallow 13 1 week before plant 13 With residual | B | 17.11 - | 12.36 b-g | 66.8 - | 55.85 - | |

The Ohio State University

| Crop Type, Code | C | GLXMA | C | GLXMA | C | GLXMA | C | GLXMA | C | - |
|----------------------------------|-----------|-------------|-----------|-------------|----------|-------------|---|-------------|---|------------|
| BBCH Scale | | BSOY | | BSOY | | BSOY | | BSOY | | |
| Crop Scientific Name | | Glycine max | | Glycine max | | Glycine max | | Glycine max | | |
| Crop Name | | Soybean | | Soybean | | Soybean | | Soybean | | |
| Rating Date | | Oct-4-2019 | | Oct-4-2019 | | Oct-4-2019 | | Oct-4-2019 | | Oct-4-2019 |
| Rating Type | | WEIGHT | | MOICON | | YIELD | | WEITES | | |
| Rating Unit | | LBS | | % | | BU | | LBS | | |
| Sample Size | | 1 PLOT | | | | 1 A | | | | |
| Number of Subsamples | | 1 | | 1 | | 1 | | 1 | | 1 |
| Days After First/Last Applic. | | - 99 | | - 99 | | - 99 | | - 99 | | - 99 |
| Plant-Eval Interval | | 141 DP-1 | | 141 DP-1 | | 141 DP-1 | | 141 DP-1 | | 141 DP-1 |
| Days After Emergence | | 126 DE-1 | | 126 DE-1 | | 126 DE-1 | | 126 DE-1 | | 126 DE-1 |
| ARM Action Codes | | | | | | TY1 | | | | |
| Number of Decimals | | 2 | | 2 | | 1 | | 2 | | |
| Trt Treatment No. Name | Appl Code | 1* | 2* | 3* | 4* | 5 | | | | |
| 14 Fallow | B | 15.95 - | 13.58 a | 61.5 - | 56.38 - | | | | | |
| 14 1 week before plant | B | | | | | | | | | |
| 14 No residual | | | | | | | | | | |
| 15 Fallow | C | 13.68 - | 13.35 ab | 53.0 - | 55.29 - | | | | | |
| 15 1 week after plant | C | | | | | | | | | |
| 15 With residual | | | | | | | | | | |
| 16 Fallow | C | 14.56 - | 12.91 a-e | 56.4 - | 56.20 - | | | | | |
| 16 1 week after plant | C | | | | | | | | | |
| 16 No residual | | | | | | | | | | |
| 17 Fallow | A | 13.86 - | 13.22 abc | 53.9 - | 55.35 - | | | | | |
| 17 April sharpen, 1 week after A | | | | | | | | | | |
| 17 With residual | | | | | | | | | | |
| 18 Fallow | A | 16.79 - | 13.10 a-d | 65.0 - | 55.91 - | | | | | |
| 18 April sharpen, 1 week after A | | | | | | | | | | |
| 18 No residual | | | | | | | | | | |
| LSD P=.05 | | 3.783 | 1.039 | 15.02 | 1.938 | | | | | |
| Standard Deviation | | 2.665 | 0.732 | 10.58 | 1.365 | | | | | |
| CV | | 16.61 | 5.87 | 16.9 | 2.46 | | | | | |
| Grand Mean | | 16.045 | 12.471 | 62.58 | 55.502 | | | | | |
| Levene's F | | 1.444 | 1.501 | 1.471 | 6.647 | | | | | |
| Levene's Prob(F) | | 0.153 | 0.13 | 0.141 | 0.001* | | | | | |
| Skewness | | -0.5386 | 1.2235* | -0.535 | -2.6186* | | | | | |
| Kurtosis | | -0.1772 | 1.6763* | -0.1721 | 9.7611* | | | | | |
| Analyzed as | | RCB | RCB | RCB | RCB | SPP | | | | |
| Replicate F | | 19.985 | 3.350 | 19.839 | 2.861 | | | | | |
| Replicate Prob(F) | | 0.0001 | 0.0260 | 0.0001 | 0.0459 | | | | | |
| Treatment F | | 0.990 | 2.479 | 1.025 | 1.645 | | | | | |
| Treatment Prob(F) | | 0.4835 | 0.0064 | 0.4489 | 0.0869 | | | | | |

Crop Type, Code

C = EPPO species (Bayer) codes

GLXMA, BSOY, Glycine max, Soybean = US

Rating Type

WEIGHT = weight

MOICON = moisture content

YIELD = yield

WEITES = weight - test

Rating Unit

% = percent

BU = bushel

PLOT = total plot

A = acre

Plant-Eval Interval

141 DP-1 = 1 GLXMA May-16-2019

ARM Action Codes

TY1 = $3.872 * [1 * (100 - [2]) / 87]$