MSU Weed Science Research Program

Comparison of soil-applied (PRE) herbicide programs in soybean

Trial ID: SOY02-15 Study Dir.: Sprague and Powell
Conducted: Campus C-12 Investigator: Christy Sprague

**Date Planted:** May/06/2015 **Row Spacing:** 30 IN
**Variety:** Pioneer 24T05RR **No. of Reps:** 4
**Population:** 150,000 seeds/A **% OM:** 3.7
**Soil Type:** Loam **pH:** 7.4
**Plot Size:** 10 **X** 30 **FT** **Design:** RANDOMIZED COMPLETE BLOCK

**Tillage:** Fall moldboard plow; spring soil finish twice

| Crop | Code | Common Name |
|---|---|---|
| 1. | GLXMA | SOYBEAN |

**Application Description**

| | A |
|---|---|
| **Application Timing:** | PRE |
| **Date Treated:** | May/07/2015 |
| **Time Treated:** | 10:15 AM |
| **% Cloud Cover:** | 10 |
| **Air Temp., Unit:** | 70 F |
| **% Relative Humidity:** | 70 |
| **Wind Speed/Unit/Dir:** | 3 mph F |
| **Soil Temp., Unit:** | 55 F |
| **Soil/Leaf Surface M:** | 5 - |
| **Soil Moist (1=w 5=d):** | 4 |

**Crop Stage at Each Application**

| | A |
|---|---|
| **Crop Name:** | GLXMA |
| **Height (In.):** | - |
| **Stage (L):** | - |

**Weed Density (plants/sq. ft.)**

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| **Date:** | Jun/09/2015 | Jun/09/2015 | Jun/09/2015 | Jun/09/2015 |
| **Weed Name:** | ANGR | CHEAL | AMBEL | ABUTH |
| **Density:** | 288 | 33 | 110 | <1 |

**Application Equipment**

| Appl | Sprayer Type | Speed MPH | Nozzle Type | Nozzle Size | Nozzle Height | Nozzle Spacing | Boom Width | GPA | Carrier | PSI |
|---|---|---|---|---|---|---|---|---|---|---|
| A | Cub | 3.8 | AIXR | 11003 | 20" | 20" | 80" | 19 | Water | 28 |

**Comments:** By the 56 days after treatment (planting) evaluation, many of the treatments were difficult to evalute due to many of the treatments failing by this point. The only treatments evaluated at this time were ones that were still providing some weed control.
Roundup PowerMax at 32 fl oz/A + AMS at 17 lb/100 gal was broadcast applied over the entire plot on July 2, 2015.

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| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Grow Stg | Appl Code | GLXMA injury percent Jun/03/2015 27 DA-A | ANGR control percent Jun/03/2015 27 DA-A | CHEAL control percent Jun/03/2015 27 DA-A | AMBEL control percent Jun/03/2015 27 DA-A | GLXMA injury percent Jun/18/2015 42 DA-A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weed Code | | | | | | | | | | | |
| | Crop Code | | | | | | | | | | | |
| | Rating Data Type | | | | | | | | | | | |
| | Rating Unit | | | | | | | | | | | |
| | Rating Date | | | | | | | | | | | |
| | Trt-Eval Interval | | | | | | | | | | | |
| | # Subsamples, Dec. | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 1 | Prowl H2O | 3.8 | L | 2.5 | pt/a | PRE | A | 7 | 92 | 99 | 0 | 12 |
| 2 | Prowl H2O | 3.8 | L | 2.1 | pt/a | PRE | A | 13 | 99 | 99 | 23 | 12 |
| 2 | Spartan | 4 | L | 3.4 | fl oz/a | PRE | A | | | | | |
| 3 | Valor | 51 | WG | 2 | oz/a | PRE | A | 19 | 75 | 99 | 81 | 0 |
| 4 | Valor | 51 | WG | 2 | oz/a | PRE | A | 18 | 81 | 99 | 87 | 1 |
| 4 | Metribuzin | 75 | WG | 4 | oz/a | PRE | A | | | | | |
| 5 | Authority MTZ | 45 | WG | 11 | oz/a | PRE | A | 2 | 84 | 99 | 45 | 0 |
| 6 | Authority MTZ | 45 | WG | 16 | oz/a | PRE | A | 3 | 95 | 99 | 62 | 0 |
| 7 | Untreated | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 8 | Fierce | 76 | WG | 3 | oz/a | PRE | A | 28 | 96 | 99 | 95 | 7 |
| 9 | Blank | | | | | | | | | | | |
| 10 | Sharpen | 2.85 | L | 1 | fl oz/a | PRE | A | 11 | 98 | 99 | 86 | 0 |
| 10 | Zidua | 85 | WG | 2.5 | oz/a | PRE | A | | | | | |
| 11 | Prefix | 5.29 | L | 2 | pt/a | PRE | A | 19 | 99 | 97 | 94 | 1 |
| 12 | Optill | 68 | WG | 2 | oz/a | PRE | A | 10 | 99 | 99 | 70 | 0 |
| 12 | Outlook | 6 | L | 10 | fl oz/a | PRE | A | | | | | |
| 13 | Optill | 68 | WG | 1.5 | oz/a | PRE | A | 8 | 99 | 99 | 80 | 0 |
| 13 | Zidua | 85 | WG | 1.5 | oz/a | PRE | A | | | | | |
| 14 | Optill | 68 | WG | 2 | oz/a | PRE | A | 13 | 99 | 99 | 91 | 1 |
| 14 | Zidua | 85 | WG | 2 | oz/a | PRE | A | | | | | |
| 15 | Boundary | 6.5 | L | 2 | pt/a | PRE | A | 14 | 99 | 99 | 71 | 2 |
| 16 | Fierce | 76 | WG | 3 | oz/a | PRE | A | 23 | 99 | 99 | 95 | 7 |
| 16 | Metribuzin | 75 | WG | 4 | oz/a | PRE | A | | | | | |
| 17 | Fierce | 76 | WG | 4.5 | oz/a | PRE | A | 36 | 99 | 99 | 99 | 15 |
| 17 | Metribuzin | 75 | WG | 6 | oz/a | PRE | A | | | | | |
| 18 | Envive | 41.3 | WG | 3.5 | oz/a | PRE | A | 24 | 83 | 99 | 86 | 13 |
| 19 | Fierce XLT | 62.4 | WG | 5.25 | oz/a | PRE | A | 38 | 99 | 99 | 98 | 28 |
| 20 | Trivence | 61.3 | WG | 8 | oz/a | PRE | A | 23 | 89 | 99 | 92 | 14 |
| | LSD (P=.05) | | | | | | | 5.5 | 6.3 | 1.5 | 6.6 | 2.8 |
| | CV | | | | | | | 24.24 | 5.03 | 1.12 | 6.55 | 33.08 |

Means followed by same letter do not significantly differ (P=.05, LSD)

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Trial ID: SOY02-15 Study Dir.: Sprague and Powell
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| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Grow Stg | Appl Code | ANGR control percent Jun/18/2015 42 DA-A 0 | CHEAL control percent Jun/18/2015 42 DA-A 0 | AMBEL control percent Jun/18/2015 42 DA-A 0 | GLXMA injury percent Jul/02/2015 56 DA-A 0 | ANGR control percent Jul/02/2015 56 DA-A 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Prowl H2O | 3.8 | L | 2.5 | pt/a | PRE | A | 86 | 99 | 0 | | |
| 2 | Prowl H2O | 3.8 | L | 2.1 | pt/a | PRE | A | 96 | 99 | 0 | | |
| 2 | Spartan | 4 | L | 3.4 | fl oz/a | PRE | A | | | | | |
| 3 | Valor | 51 | WG | 2 | oz/a | PRE | A | 0 | 99 | 60 | | |
| 4 | Valor | 51 | WG | 2 | oz/a | PRE | A | 29 | 99 | 71 | | |
| 4 | Metribuzin | 75 | WG | 4 | oz/a | PRE | A | | | | | |
| 5 | Authority MTZ | 45 | WG | 11 | oz/a | PRE | A | 75 | 99 | 5 | | |
| 6 | Authority MTZ | 45 | WG | 16 | oz/a | PRE | A | 73 | 99 | 50 | | |
| 7 | Untreated | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 8 | Fierce | 76 | WG | 3 | oz/a | PRE | A | 82 | 99 | 83 | 1 | 78 |
| 9 | Blank | | | | | | | | | | | |
| 10 | Sharpen | 2.85 | L | 1 | fl oz/a | PRE | A | 84 | 99 | 77 | 0 | 87 |
| 10 | Zidua | 85 | WG | 2.5 | oz/a | PRE | A | | | | | |
| 11 | Prefix | 5.29 | L | 2 | pt/a | PRE | A | 96 | 91 | 85 | 0 | 95 |
| 12 | Optill | 68 | WG | 2 | oz/a | PRE | A | 89 | 99 | 65 | | |
| 12 | Outlook | 6 | L | 10 | fl oz/a | PRE | A | | | | | |
| 13 | Optill | 68 | WG | 1.5 | oz/a | PRE | A | 89 | 94 | 71 | 0 | 75 |
| 13 | Zidua | 85 | WG | 1.5 | oz/a | PRE | A | | | | | |
| 14 | Optill | 68 | WG | 2 | oz/a | PRE | A | 93 | 99 | 80 | 1 | 93 |
| 14 | Zidua | 85 | WG | 2 | oz/a | PRE | A | | | | | |
| 15 | Boundary | 6.5 | L | 2 | pt/a | PRE | A | 97 | 99 | 59 | | |
| 16 | Fierce | 76 | WG | 3 | oz/a | PRE | A | 87 | 99 | 87 | 3 | 77 |
| 16 | Metribuzin | 75 | WG | 4 | oz/a | PRE | A | | | | | |
| 17 | Fierce | 76 | WG | 4.5 | oz/a | PRE | A | 94 | 99 | 96 | 10 | 92 |
| 17 | Metribuzin | 75 | WG | 6 | oz/a | PRE | A | | | | | |
| 18 | Envive | 41.3 | WG | 3.5 | oz/a | PRE | A | 77 | 99 | 75 | 4 | 73 |
| 19 | Fierce XLT | 62.4 | WG | 5.25 | oz/a | PRE | A | 98 | 99 | 91 | 19 | 95 |
| 20 | Trivence | 61.3 | WG | 8 | oz/a | PRE | A | 82 | 99 | 82 | 11 | 76 |
| LSD (P=.05) | | | | | | | | 8.1 | 5.3 | 5.7 | 3.3 | 7.7 |
| CV | | | | | | | | 7.61 | 4.02 | 6.77 | 51.66 | 7.0 |

Means followed by same letter do not significantly differ (P=.05, LSD)

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Comparison of soil-applied (PRE) herbicide programs in soybean

Trial ID: SOY02-15 Study Dir.: Sprague and Powell
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| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Grow Stg | Appl Code | CHEAL | AMBEL | ABUTH | GLXMA | GLXMA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Weed Code | | | | | | | | CHEAL | AMBEL | ABUTH | | |
| Crop Code | | | | | | | | | | | GLXMA | GLXMA |
| Rating Data Type | | | | | | | | control | control | control | moisture | yield |
| Rating Unit | | | | | | | | percent | percent | percent | percent | bu/acre |
| Rating Date | | | | | | | | Jul/02/2015 | Jul/02/2015 | Jul/02/2015 | Oct/16/2015 | Oct/16/2015 |
| Trt-Eval Interval | | | | | | | | 56 DA-A | 56 DA-A | 56 DA-A | 162 DA-A | at 13% M |
| # Subsamples, Dec. | | | | | | | | 0 | 0 | 0 | 1 | 1 |
| 1 | Prowl H2O | 3.8 | L | 2.5 | pt/a | PRE | A | | | | 15.5 | 50.1 |
| 2 | Prowl H2O | 3.8 | L | 2.1 | pt/a | PRE | A | | | | 15.2 | 53.4 |
| 2 | Spartan | 4 | L | 3.4 | fl oz/a | PRE | A | | | | | |
| 3 | Valor | 51 | WG | 2 | oz/a | PRE | A | | | | 15.3 | 75.7 |
| 4 | Valor | 51 | WG | 2 | oz/a | PRE | A | | | | 15.5 | 74.6 |
| 4 | Metribuzin | 75 | WG | 4 | oz/a | PRE | A | | | | | |
| 5 | Authority MTZ | 45 | WG | 11 | oz/a | PRE | A | | | | 15.0 | 67.7 |
| 6 | Authority MTZ | 45 | WG | 16 | oz/a | PRE | A | | | | 14.9 | 76.2 |
| 7 | Untreated | | | | | | | 0 | 0 | 0 | 15.3 | 58.6 |
| 8 | Fierce | 76 | WG | 3 | oz/a | PRE | A | 99 | 75 | 99 | 15.1 | 76.4 |
| 9 | Blank | | | | | | | | | | | |
| 10 | Sharpen | 2.85 | L | 1 | fl oz/a | PRE | A | 96 | 71 | 99 | 15.1 | 80.2 |
| 10 | Zidua | 85 | WG | 2.5 | oz/a | PRE | A | | | | | |
| 11 | Prefix | 5.29 | L | 2 | pt/a | PRE | A | 85 | 87 | 65 | 14.6 | 81.7 |
| 12 | Optill | 68 | WG | 2 | oz/a | PRE | A | | | | 15.1 | 77.0 |
| 12 | Outlook | 6 | L | 10 | fl oz/a | PRE | A | | | | | |
| 13 | Optill | 68 | WG | 1.5 | oz/a | PRE | A | 99 | 60 | 99 | 15.0 | 74.4 |
| 13 | Zidua | 85 | WG | 1.5 | oz/a | PRE | A | | | | | |
| 14 | Optill | 68 | WG | 2 | oz/a | PRE | A | 99 | 75 | 99 | 15.2 | 81.6 |
| 14 | Zidua | 85 | WG | 2 | oz/a | PRE | A | | | | | |
| 15 | Boundary | 6.5 | L | 2 | pt/a | PRE | A | | | | 15.0 | 73.7 |
| 16 | Fierce | 76 | WG | 3 | oz/a | PRE | A | 99 | 86 | 99 | 15.0 | 77.5 |
| 16 | Metribuzin | 75 | WG | 4 | oz/a | PRE | A | | | | | |
| 17 | Fierce | 76 | WG | 4.5 | oz/a | PRE | A | 99 | 96 | 99 | 15.4 | 74.4 |
| 17 | Metribuzin | 75 | WG | 6 | oz/a | PRE | A | | | | | |
| 18 | Envive | 41.3 | WG | 3.5 | oz/a | PRE | A | 99 | 61 | 99 | 15.2 | 75.5 |
| 19 | Fierce XLT | 62.4 | WG | 5.25 | oz/a | PRE | A | 99 | 92 | 99 | 15.3 | 70.5 |
| 20 | Trivence | 61.3 | WG | 8 | oz/a | PRE | A | 99 | 81 | 99 | 14.9 | 73.9 |
| LSD (P=.05) | | | | | | | | 5.8 | 8.4 | 2.5 | 0.79 | 6.77 |
| CV | | | | | | | | 4.53 | 8.12 | 2.0 | 3.68 | 6.62 |

Means followed by same letter do not significantly differ (P=.05, LSD)