

MSU Weed Science Research Program

The effect of preharvest herbicide treatments on weed control in dry beans

Trial ID: DB02-15
Conducted: SVREC

Study Dir.: Sprague and Powell
Investigator: Christy Sprague

Date Planted: Jun/04/2015 Row Spacing: 30 IN
Variety: 'Merlin' navy bean No. of Reps: 4
Population: 106,000 seeds/A % OM: 2.6
Soil Type: Clay loam pH: 8.1
Plot Size: 10 X 30 FT Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall-moldboard plow; spring soil finish twice
Fertilizer: 280 lb/A of 17-8-15 with Mg and Zn

Crop and Weed Description

| Weed | Code | Common Name | Scientific Name |
|------|-------|-----------------------|----------------------|
| 1. | CHEAL | LAMBSQUARTERS, COMMON | CHENOPODIUM ALBUM L. |
| Crop | Code | Common Name | |
| 1. | PHSVX | BEAN, NAVY | |

Application Description

A
Application Timing: PREHARV
Date Treated: Aug/25/2015
Time Treated: 11:30 am
% Cloud Cover: 100
Air Temp., Unit: 62 F
% Relative Humidity: 65
Wind Speed/Unit/Dir: 5 mph W
Soil Temp., Unit: 63 F
Soil/Leaf Surface M: 2 5
Soil Moist (1=w 5=d): 2

Crop Stage at Each Application

A
Crop Name: PHSVX
Height (In.): 20"
Stage (L): 80% y.pod

Weed Stage at Each Application

A
Weed 1 Name: CHEAL
Height (In.): 27-58"
Stage (L): flowering

Weed Density (plants/sq. ft.)

1
Weed Name: CHEAL
Density: 2

Application Equipment

| Appl | Sprayer | Speed | Nozzle | Nozzle | Nozzle | Nozzle | Boom | | | |
|------|---------|-------|--------|--------|--------|---------|-------|-----|---------|-----|
| | Type | MPH | Type | Size | Height | Spacing | Width | GPA | Carrier | PSI |
| A | Cub | 3.8 | AIXR | 11003 | 55" | 20" | 100" | 19 | Water | 30 |

Comments: Eptam (1 qt/A) + Dual II Magnum (1 pt/A) was applied PPI.
At preharvest herbicide application leaves were 70% yellow and pods were 80% yellow.

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| Weed Code | | | | | | | | CHEAL | | CHEAL | |
|--------------------|------------------|-----------|-----------|------|------------|----------|-----------|-------------|-------------|-------------|-------------|
| Crop Code | | | | | | | | PHSVX | desiccation | PHSVX | desiccation |
| Rating Data Type | | | | | | | | percent | percent | percent | percent |
| Rating Unit | | | | | | | | Aug/28/2015 | Aug/28/2015 | Aug/31/2015 | Aug/31/2015 |
| Rating Date | | | | | | | | 3 DA-A | 3 DA-A | 6 DA-A | 6 DA-A |
| Trt-Eval Interval | | | | | | | | 0 | 0 | 0 | 0 |
| # Subsamples, Dec. | | | | | | | | 0 | 0 | 0 | 0 |
| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Grow Stg | Appl Code | | | | |
| 1 | Sharpen | 2.85 | L | 1 | fl oz/a | 80% | A | 80 | 4 | 91 | 50 |
| 1 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 1 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 2 | Gramoxone SL | 2 | L | 2 | pt/a | 80% | A | 82 | 63 | 84 | 77 |
| 2 | Surfactant | | L | 0.25 | % v/v | 80% | A | | | | |
| 3 | Valor | 51 | WG | 1.5 | oz/a | 80% | A | 70 | 17 | 85 | 33 |
| 3 | MSO | | L | 1 | qt/a | 80% | A | | | | |
| 4 | Roundup PowerMax | 4.5 | SL | 22 | fl oz/a | 80% | A | 64 | 3 | 75 | 11 |
| 4 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 5 | Untreated | | | | | | | 56 | 0 | 61 | 0 |
| 6 | Untreated | | | | | | | 51 | 0 | 56 | 0 |
| 7 | Aim | 2 | L | 2 | fl oz/a | 80% | A | 65 | 5 | 76 | 20 |
| 7 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 8 | Sharpen | 2.85 | L | 2 | fl oz/a | 80% | A | 73 | 14 | 91 | 60 |
| 8 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 8 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 9 | Sharpen | 2.85 | L | 1 | fl oz/a | 80% | A | 70 | 5 | 84 | 18 |
| 9 | Roundup PowerMax | 4.5 | SL | 22 | fl oz/a | 80% | A | | | | |
| 9 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 9 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 10 | Sharpen | 2.85 | L | 1 | fl oz/a | 80% | A | 85 | 80 | 91 | 89 |
| 10 | Gramoxone SL | 2 | L | 2 | pt/a | 80% | A | | | | |
| 10 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 10 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 11 | Valor | 51 | WG | 1.5 | oz/a | 80% | A | 73 | 33 | 91 | 43 |
| 11 | Roundup PowerMax | 4.5 | SL | 22 | fl oz/a | 80% | A | | | | |
| 11 | MSO | | L | 1 | qt/a | 80% | A | | | | |
| 11 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 12 | Valor | 51 | WG | 1.5 | oz/a | 80% | A | 85 | 78 | 88 | 90 |
| 12 | Gramoxone SL | 2 | L | 2 | pt/a | 80% | A | | | | |
| 12 | MSO | | L | 1 | qt/a | 80% | A | | | | |
| 12 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 13 | Aim | 2 | L | 2 | fl oz/a | 80% | A | 72 | 9 | 83 | 21 |
| 13 | Roundup PowerMax | 4.5 | SL | 22 | fl oz/a | 80% | A | | | | |
| 13 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 13 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 14 | Aim | 2 | L | 2 | fl oz/a | 80% | A | 83 | 74 | 90 | 90 |
| 14 | Gramoxone SL | 2 | L | 2 | pt/a | 80% | A | | | | |
| 14 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 14 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 15 | Untreated | | | | | | | 58 | 0 | 60 | 0 |
| LSD (P=.05) | | | | | | | | 7.7 | 13.2 | 7.1 | 14.8 |
| CV | | | | | | | | 7.63 | 36.34 | 6.17 | 25.93 |

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Investigator: Christy SpragueWeed Code
Crop Code
Rating Data Type
Rating Unit
Rating Date
Trt-Eval Interval
Subsamples, Dec.CHEAL
PHSVX desiccation percent
PHSVX moisture percent
PHSVX yield cwt/acre
PHSVX at 18% M

| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Grow Stg | Appl Code | PHSVX desiccation percent Sep/06/2015 12 DA-A 0 | CHEAL desiccation percent Sep/06/2015 12 DA-A 0 | PHSVX moisture percent Sep/10/2015 16 DA-A 1 | PHSVX yield cwt/acre Sep/10/2015 at 18% M 1 |
|-------------|------------------|-----------|-----------|------|------------|----------|-----------|--|--|---|--|
| 1 | Sharpen | 2.85 | L | 1 | fl oz/a | 80% | A | 97 | 50 | 20.7 | 21.7 |
| 1 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 1 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 2 | Gramoxone SL | 2 | L | 2 | pt/a | 80% | A | 84 | 90 | 21.1 | 20.3 |
| 2 | Surfactant | | L | 0.25 | % v/v | 80% | A | | | | |
| 3 | Valor | 51 | WG | 1.5 | oz/a | 80% | A | 94 | 70 | 21.3 | 19.4 |
| 3 | MSO | | L | 1 | qt/a | 80% | A | | | | |
| 4 | Roundup PowerMax | 4.5 | SL | 22 | fl oz/a | 80% | A | 98 | 91 | 20.6 | 22.5 |
| 4 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 5 | Untreated | | | | | | | 73 | 0 | 22.0 | 22.7 |
| 6 | Untreated | | | | | | | 65 | 0 | 20.5 | 23.4 |
| 7 | Aim | 2 | L | 2 | fl oz/a | 80% | A | 82 | 24 | 20.7 | 21.5 |
| 7 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 8 | Sharpen | 2.85 | L | 2 | fl oz/a | 80% | A | 98 | 76 | 21.0 | 15.9 |
| 8 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 8 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 9 | Sharpen | 2.85 | L | 1 | fl oz/a | 80% | A | 99 | 81 | 20.2 | 17.9 |
| 9 | Roundup PowerMax | 4.5 | SL | 22 | fl oz/a | 80% | A | | | | |
| 9 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 9 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 10 | Sharpen | 2.85 | L | 1 | fl oz/a | 80% | A | 97 | 94 | 20.0 | 23.2 |
| 10 | Gramoxone SL | 2 | L | 2 | pt/a | 80% | A | | | | |
| 10 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 10 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 11 | Valor | 51 | WG | 1.5 | oz/a | 80% | A | 98 | 92 | 20.4 | 20.1 |
| 11 | Roundup PowerMax | 4.5 | SL | 22 | fl oz/a | 80% | A | | | | |
| 11 | MSO | | L | 1 | qt/a | 80% | A | | | | |
| 11 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 12 | Valor | 51 | WG | 1.5 | oz/a | 80% | A | 92 | 94 | 21.2 | 19.6 |
| 12 | Gramoxone SL | 2 | L | 2 | pt/a | 80% | A | | | | |
| 12 | MSO | | L | 1 | qt/a | 80% | A | | | | |
| 12 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 13 | Aim | 2 | L | 2 | fl oz/a | 80% | A | 99 | 88 | 21.1 | 21.5 |
| 13 | Roundup PowerMax | 4.5 | SL | 22 | fl oz/a | 80% | A | | | | |
| 13 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 13 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 14 | Aim | 2 | L | 2 | fl oz/a | 80% | A | 91 | 91 | 21.1 | 21.2 |
| 14 | Gramoxone SL | 2 | L | 2 | pt/a | 80% | A | | | | |
| 14 | MSO | | L | 1 | % v/v | 80% | A | | | | |
| 14 | AMS | | WG | 17 | lb/100 gal | 80% | A | | | | |
| 15 | Untreated | | | | | | | 69 | 0 | 23.5 | 24.6 |
| LSD (P=.05) | | | | | | | | 7.2 | 11.5 | 1.51 | 3.59 |
| CV | | | | | | | | 5.68 | 12.81 | 5.04 | 11.92 |