

MSU Weed Science Research Program

Weed Control Systems in Roundup Ready Sugarbeets

Trial ID: SB04-07 Study Dir.: Sprague, Powell
 Conducted: Bean & Beet Farm Investigator: Christy Sprague

Date Planted: 4/20/07 Row Spacing: 30 IN
 Variety: Beta RZ02RR07 No. of Reps: 4
 Population: 4 3/8" spacing % OM: 3.9
 Soil Type: Silty Clay pH: 7.4
 Plot Size: 10 X 30 FT Design: RANDOMIZED COMPLETE BLOCK

Tillage: Fall Chisel Plow, Spring Soil Finish X 2, Previous Crop Wheat
 Fertilizer: 120 lb of Nitrogen as Urea

Crop and Weed Description

| Weed | Code | Common Name | Scientific Name |
|------|-------|-------------------------|-----------------------------|
| 1. | CHEAL | LAMBSQUARTERS, COMMON | CHENOPODIUM ALBUM L. |
| 2. | POLPY | SMARTWEED, PENNSYLVANIA | POLYGONUM PENNSYLVANICUM L. |
| 3. | ABUTH | VELVETLEAF | ABUTILON THEOPHRASTI MEDIK. |
| 4. | ANGR | mainly foxtail species | SETARIA SP. |
| 5. | AMAPO | AMARANTH, POWELL | AMARANTHUS POWELLII S.WATS. |
| 6. | THLAR | PENNYCRESS, FIELD | THLASPI ARVENSE L. |
| Crop | Code | Common Name | |
| 1. | BETVU | BEEET, SUGAR | |

Application Description

| | A | B | C | D | E |
|-----------------------|----------|----------|----------|----------|----------|
| Application Timing: | PRE | Micro 1 | Micro 2 | EPOST | Micro 3 |
| Date Treated: | 4/21/07 | 4/30/07 | 5/10/07 | 5/18/07 | 5/22/07 |
| Time Treated: | 5:15 PM | 6:45 PM | 6:30 PM | 1:15 PM | 11:00 AM |
| % Cloud Cover: | 20 | 60 | 30 | 5 | 0 |
| Air Temp., Unit: | 77 F | 68 F | 78 F | 68 F | 75 F |
| % Relative Humidity: | 25 | 32 | 34 | 20 | 40 |
| Wind Speed/Unit/Dir: | 5 mph W | 4 mph S | 3 mph SW | 4 mph SW | 0 mph |
| Soil Temp., Unit: | 63 F | 69 F | 73 F | 58 F | 70 F |
| Soil/Leaf Surface M: | 5 5 | 5 5 | 5 5 | 5 5 | 5 5 |
| Soil Moist (1=w 5=d): | 5 | 5 | 4 | 5 | 4 |
| | F | G | H | | |
| Application Timing: | Micro 4 | MPOS | POST | | |
| Date Treated: | 5/30/07 | 6/6/07 | 6/12/07 | | |
| Time Treated: | 11:15 AM | 11:00 AM | 10:00 AM | | |
| % Cloud Cover: | 50 | 0 | 0 | | |
| Air Temp., Unit: | 85 F | 64 F | 77 F | | |
| % Relative Humidity: | 45 | 52 | 43 | | |
| Wind Speed/Unit/Dir: | 3 mph S | 5 mph SW | 5 mph NW | | |
| Soil Temp., Unit: | 73 F | 60 F | 69 F | | |
| Soil/Leaf Surface M: | 5 5 | 5 5 | 5 5 | | |
| Soil Moist (1=w 5=d): | 5 | 4 | 5 | | |

Crop Stage at Each Application

| | A | B | C | D | E |
|---------------|-------|----------|--------|-------|-------|
| Crop Name: | BETVU | BETVU | BETVU | BETVU | BETVU |
| Height (In.): | - | 1/4-1/2" | 1/2-1" | 1-2" | 1-3" |
| Stage (L): | - | coty | 2 | 4 | 4-6 |
| | F | G | H | | |
| Crop Name: | BETVU | BETVU | BETVU | | |
| Height (In.): | 2-5" | 7-11" | 9-11" | | |
| Stage (L): | 4-8 | 8-10 | 12-14 | | |

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Weed Stage at Each Application

| | A | B | C | D | E |
|---------------|-----------|-----------|-----------|-----------|-----------|
| Weed 1 Name: | CHEAL | CHEAL | CHEAL | CHEAL | CHEAL |
| Height (In.): | - | 0.12-0.25 | 0.25-1" | 0.5-2" | 1-2.5" |
| Stage (L): | - | coty | coty-4 | 2-10 | 2-6 |
| Weed 2 Name: | POLPY | POLPY | POLPY | POLPY | POLPY |
| Height (In.): | - | 0.125" | 0.25-0.5" | - | - |
| Stage (L): | - | coty | coty-2 | - | - |
| Weed 3 Name: | ABUTH | ABUTH | ABUTH | ABUTH | ABUTH |
| Height (In.): | - | 0.25" | - | - | 0.25" |
| Stage (L): | - | coty | - | - | coty |
| Weed 4 Name: | ANGR | ANGR | ANGR | ANGR | ANGR |
| Height (In.): | - | - | 0.25" | 0.5" | 0.75-1.5" |
| Stage (L): | - | - | 1-2 | 2 | 2-3 |
| Weed 5 Name: | AMAPO | AMAPO | AMAPO | AMAPO | AMAPO |
| Height (In.): | - | - | - | 0.25-0.5" | - |
| Stage (L): | - | - | - | 2-4 | - |
| Weed 6 Name: | THLAR | THLAR | THLAR | THLAR | THLAR |
| Height (In.): | - | - | - | - | - |
| Stage (L): | - | - | - | - | - |
| | F | G | H | | |
| Weed 1 Name: | CHEAL | CHEAL | CHEAL | | |
| Height (In.): | 0.5-1.5" | 0.75-4" | 3-5" | | |
| Stage (L): | 2-6 | 2-8 | 6-14 | | |
| Weed 2 Name: | POLPY | POLPY | POLPY | | |
| Height (In.): | - | - | - | | |
| Stage (L): | - | - | - | | |
| Weed 3 Name: | ABUTH | ABUTH | ABUTH | | |
| Height (In.): | - | - | - | | |
| Stage (L): | - | - | - | | |
| Weed 4 Name: | ANGR | ANGR | ANGR | | |
| Height (In.): | 0.5-1" | 2.5-9" | - | | |
| Stage (L): | 2 | 4-6 | - | | |
| Weed 5 Name: | AMAPO | AMAPO | AMAPO | | |
| Height (In.): | 0.5-0.75" | 0.5-3" | 3-4" | | |
| Stage (L): | 4-6 | 4-10 | 6-8 | | |
| Weed 6 Name: | THLAR | THLAR | THLAR | | |
| Height (In.): | - | - | - | | |
| Stage (L): | - | - | - | | |

Weed Density (plants/sq. ft.)

| | 1 | 2 | 3 | 4 | 5 |
|------------|---------|---------|---------|---------|---------|
| Date: | 7/12/07 | 7/12/07 | 7/12/07 | 7/12/07 | 7/12/07 |
| Weed Name: | CHEAL | THLAR | AMAPO | POLPY | ANGR |
| Density: | 7 | 1 | 3 | <1 | 2 |

Application Equipment

| Appl | Sprayer Type | Speed MPH | Nozzle Type | Nozzle Size | Nozzle Height | Nozzle Spacing | Nozzle Width | GPA | Carrier | PSI |
|------|--------------|-----------|-------------|-------------|---------------|----------------|--------------|-----|---------|-----|
| A | Cub | 3.8 | AirMix | 11003 | 22" | 20 | 100 | 19 | water | 27 |
| B | Cub | 3.8 | AirMix | 11003 | 21" | 20 | 100 | 19 | water | 27 |
| C | Cub | 3.8 | AirMix | 11003 | 21" | 20 | 100 | 19 | water | 27 |
| D | Cub | 3.8 | AirMix | 11003 | 22" | 20 | 100 | 19 | water | 27 |
| E | Cub | 3.8 | AirMix | 11003 | 22" | 20 | 100 | 19 | water | 27 |
| F | Cub | 3.8 | AirMix | 11003 | 25" | 20 | 100 | 19 | water | 27 |
| G | Cub | 3.8 | AirMix | 11003 | 25" | 20 | 100 | 19 | water | 27 |
| H | Cub | 3.8 | AirMix | 11003 | 25" | 20 | 100 | 19 | water | 27 |

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Study Dir.: Sprague, Powell

Conducted: Bean & Beet Farm

Investigator: Christy Sprague

| | | | | | | | |
|-------------------|--|---------|---------|---------|---------|---------|---------|
| Weed Code | | CHEAL | AMAPO | POLPY | THLAR | | CHEAL |
| Crop Code | | BETVU | | | | BETVU | |
| Rating Data Type | | injury | control | control | control | injury | control |
| Rating Unit | | percent | percent | percent | percent | percent | percent |
| Rating Date | | 6/6/07 | 6/6/07 | 6/6/07 | 6/6/07 | 6/12/07 | 6/12/07 |
| Trt-Eval Interval | | 65 DA-A | 65 DA-A | 65 DA-A | 65 DA-A | 71 DA-A | 71 DA-A |

| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Grow Stg | Appl Code | | | | | | | |
|---------|---------------------|-----------|-----------|------|------------|----------|-----------|----|----|----|----|----|----|----|
| 1 | Nortron | 4 | SC | 3 | pt/a | PRE | A | 1 | 20 | 96 | 99 | 23 | 0 | 84 |
| 1 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MPOS | G | | | | | | | |
| 1 | AMS | | WG | 17 | lb/100 gal | MPOS | G | | | | | | | |
| 1 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | | | | |
| 1 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | | | | |
| 2 | Dual Magnum | 7.64 | EC | 1.33 | pt/a | PRE | A | 14 | 33 | 75 | 99 | 84 | 9 | 85 |
| 2 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MPOS | G | | | | | | | |
| 2 | AMS | | WG | 17 | lb/100 gal | MPOS | G | | | | | | | |
| 2 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | | | | |
| 2 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | | | | |
| 3 | KIH-485 | 85 | WG | 2 | oz/a | PRE | A | 76 | 58 | 93 | 94 | 99 | 63 | 92 |
| 3 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MPOS | G | | | | | | | |
| 3 | AMS | | WG | 17 | lb/100 gal | MPOS | G | | | | | | | |
| 3 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | | | | |
| 3 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | | | | |
| 4 | Untreated | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 0 | 86 | 90 | 99 | 99 | 0 | 81 |
| 5 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | | | | |
| 5 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | | | | |
| 5 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | | | | |
| 5 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | | | | |
| 5 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | | | | |
| 6 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 0 | 85 | 89 | 99 | 99 | 0 | 81 |
| 6 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | | | | |
| 6 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | | | | |
| 6 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | | | | |
| 7 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 0 | 86 | 91 | 99 | 99 | 0 | 81 |
| 7 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | | | | |
| 7 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | | | | |
| 7 | KIH-485 | 85 | WG | 2 | oz/a | POST | H | | | | | | | |
| 7 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | | | | |
| 8 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 0 | 88 | 91 | 99 | 99 | 0 | 81 |
| 8 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | | | | |
| 8 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | | | | |
| 8 | Outlook | 6 | EC | 16 | fl oz/a | POST | H | | | | | | | |
| 8 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | | | | |
| 9 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 0 | 85 | 91 | 99 | 99 | 0 | 84 |
| 9 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | | | | |
| 9 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | | | | |
| 9 | Dual Magnum | 7.64 | EC | 1.33 | pt/a | POST | H | | | | | | | |
| 9 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | | | | |
| 10 | Weed-Free | | | | | | | 0 | 99 | 99 | 99 | 99 | 0 | 96 |
| 10 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MICRO 2 | C | | | | | | | |
| 10 | AMS | | WG | 17 | lb/100 gal | MICRO 2 | C | | | | | | | |
| 10 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MPOS | G | | | | | | | |
| 10 | AMS | | WG | 17 | lb/100 gal | MPOS | G | | | | | | | |
| 10 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | | | | |
| 10 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | | | | |

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Conducted: Bean & Beet Farm

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| Weed Code | CHEAL | AMAPO | POLPY | THLAR | CHEAL |
|-------------------|---------|---------|---------|---------|---------|
| Crop Code | BETVU | BETVU | BETVU | BETVU | BETVU |
| Rating Data Type | injury | control | control | control | injury |
| Rating Unit | percent | percent | percent | percent | percent |
| Rating Date | 6/6/07 | 6/6/07 | 6/6/07 | 6/6/07 | 6/12/07 |
| Trt-Eval Interval | 65 DA-A | 65 DA-A | 65 DA-A | 65 DA-A | 71 DA-A |

| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Grow Stg | Appl Code | | | | | | | |
|--------------------|--------------------|-----------|-----------|-------|-----------|----------|-----------|-------|------|-------|------|-------|-------|------|
| 11 | Betamix | 1.3 | EC | 8 | fl oz/a | MICRO 1 | B | 23 | 84 | 99 | 99 | 99 | 15 | 70 |
| 11 | Upbeet | 50 | DF | 0.125 | oz/a | MICRO 1 | B | | | | | | | |
| 11 | Stinger | 3 | L | 1 | fl oz/a | MICRO 1 | B | | | | | | | |
| 11 | MSO | | L | 1.5 | % v/v | MICRO 1 | B | | | | | | | |
| 11 | Betamix | 1.3 | EC | 8 | fl oz/a | MICRO 2 | C | | | | | | | |
| 11 | Upbeet | 50 | DF | 0.125 | oz/a | MICRO 2 | C | | | | | | | |
| 11 | Stinger | 3 | L | 1 | fl oz/a | MICRO 2 | C | | | | | | | |
| 11 | MSO | | L | 1.5 | % v/v | MICRO 2 | C | | | | | | | |
| 11 | Betamix | 1.3 | EC | 8 | fl oz/a | MICRO 3 | E | | | | | | | |
| 11 | Upbeet | 50 | DF | 0.125 | oz/a | MICRO 3 | E | | | | | | | |
| 11 | Stinger | 3 | L | 1 | fl oz/a | MICRO 3 | E | | | | | | | |
| 11 | MSO | | L | 1.5 | % v/v | MICRO 3 | E | | | | | | | |
| 11 | Betamix | 1.3 | EC | 8 | fl oz/a | MICRO 4 | F | | | | | | | |
| 11 | Upbeet | 50 | DF | 0.125 | oz/a | MICRO 4 | F | | | | | | | |
| 11 | Stinger | 3 | L | 1 | fl oz/a | MICRO 4 | F | | | | | | | |
| 11 | MSO | | L | 1.5 | % v/v | MICRO 4 | F | | | | | | | |
| 12 | Betamix | 1.3 | EC | 2 | pt/a | STD 1 | C | 14 | 95 | 97 | 99 | 99 | 6 | 89 |
| 12 | Upbeet | 50 | DF | 0.5 | oz/a | STD 1 | C | | | | | | | |
| 12 | Stinger | 3 | L | 4 | fl oz/a | STD 1 | C | | | | | | | |
| 12 | Betamix | 1.3 | EC | 3 | pt/a | STD 2 | E | | | | | | | |
| 12 | Upbeet | 50 | DF | 0.5 | oz/a | STD 2 | E | | | | | | | |
| 12 | Stinger | 3 | L | 4 | fl oz/a | STD 2 | E | | | | | | | |
| 12 | Activator 90 (NIS) | | L | 0.25 | % v/v | STD 2 | E | | | | | | | |
| LSD (P=.05) | | | | | | | | 4.3 | 7.5 | 13.1 | 4.0 | 12.7 | 2.6 | 5.4 |
| Standard Deviation | | | | | | | | 3.0 | 5.2 | 9.1 | 2.7 | 8.8 | 1.8 | 3.7 |
| CV | | | | | | | | 27.88 | 7.63 | 10.78 | 3.04 | 10.54 | 23.28 | 4.86 |

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Study Dir.: Sprague, Powell

Conducted: Bean & Beet Farm

Investigator: Christy Sprague

| Weed Code | AMAPO | CHEAL | AMAPO | ANGR | BETVU |
|-------------------|---------|---------|---------|---------|-------------|
| Crop Code | control | injury | control | control | control |
| Rating Data Type | percent | percent | percent | percent | stand count |
| Rating Unit | 6/12/07 | 7/5/07 | 7/5/07 | 7/5/07 | 9/25/07 |
| Rating Date | 71 DA-A | 94 DA-A | 94 DA-A | 94 DA-A | 157 DA-A |
| Trt-Eval Interval | | | | | |

| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Grow Stg | Appl Code | AMAPO | BETVU | CHEAL | AMAPO | ANGR | BETVU |
|---------|---------------------|-----------|-----------|------|------------|----------|-----------|-------|-------|-------|-------|------|-------|
| 1 | Nortron | 4 | SC | 3 | pt/a | PRE | A | 91 | 9 | 99 | 99 | 99 | 249 |
| 1 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MPOS | G | | | | | | |
| 1 | AMS | | WG | 17 | lb/100 gal | MPOS | G | | | | | | |
| 1 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | | | |
| 1 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | | | |
| 2 | Dual Magnum | 7.64 | EC | 1.33 | pt/a | PRE | A | 91 | 1 | 99 | 99 | 99 | 229 |
| 2 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MPOS | G | | | | | | |
| 2 | AMS | | WG | 17 | lb/100 gal | MPOS | G | | | | | | |
| 2 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | | | |
| 2 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | | | |
| 3 | KIH-485 | 85 | WG | 2 | oz/a | PRE | A | 97 | 56 | 99 | 99 | 99 | 87 |
| 3 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MPOS | G | | | | | | |
| 3 | AMS | | WG | 17 | lb/100 gal | MPOS | G | | | | | | |
| 3 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | | | |
| 3 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | | | |
| 4 | Untreated | | | | | | | 0 | 0 | 0 | 0 | 0 | 229 |
| 5 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 88 | 0 | 99 | 99 | 99 | 249 |
| 5 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | | | |
| 5 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | | | |
| 5 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | | | |
| 5 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | | | |
| 5 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | | | |
| 6 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 88 | 0 | 99 | 99 | 99 | 233 |
| 6 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | | | |
| 6 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | | | |
| 6 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | | | |
| 7 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 88 | 0 | 99 | 99 | 99 | 221 |
| 7 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | | | |
| 7 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | | | |
| 7 | KIH-485 | 85 | WG | 2 | oz/a | POST | H | | | | | | |
| 7 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | | | |
| 8 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 87 | 0 | 99 | 99 | 99 | 217 |
| 8 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | | | |
| 8 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | | | |
| 8 | Outlook | 6 | EC | 16 | fl oz/a | POST | H | | | | | | |
| 8 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | | | |
| 9 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 90 | 0 | 94 | 94 | 94 | 230 |
| 9 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | | | |
| 9 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | | | |
| 9 | Dual Magnum | 7.64 | EC | 1.33 | pt/a | POST | H | | | | | | |
| 9 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | | | |
| 10 | Weed-Free | | | | | | | 99 | 0 | 91 | 96 | 96 | 248 |
| 10 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MICRO 2 | C | | | | | | |
| 10 | AMS | | WG | 17 | lb/100 gal | MICRO 2 | C | | | | | | |
| 10 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MPOS | G | | | | | | |
| 10 | AMS | | WG | 17 | lb/100 gal | MPOS | G | | | | | | |
| 10 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | | | |
| 10 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | | | |

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| Weed Code | AMAPO | CHEAL | AMAPO | ANGR | BETVU |
|-------------------|---------|---------|---------|---------|-------------|
| Crop Code | control | injury | control | control | control |
| Rating Data Type | percent | percent | percent | percent | stand count |
| Rating Unit | 6/12/07 | 7/5/07 | 7/5/07 | 7/5/07 | 9/25/07 |
| Rating Date | 71 DA-A | 94 DA-A | 94 DA-A | 94 DA-A | 157 DA-A |
| Trt-Eval Interval | | | | | |

| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Grow Stg | Appl Code | AMAPO | BETVU | CHEAL | AMAPO | ANGR | BETVU |
|--------------------|--------------------|-----------|-----------|-------|-----------|----------|-----------|-------|-------|-------|-------|------|-------|
| 11 | Betamix | 1.3 | EC | 8 | fl oz/a | MICRO 1 | B | 74 | 0 | 78 | 87 | 85 | 213 |
| 11 | Upbeet | 50 | DF | 0.125 | oz/a | MICRO 1 | B | | | | | | |
| 11 | Stinger | 3 | L | 1 | fl oz/a | MICRO 1 | B | | | | | | |
| 11 | MSO | | L | 1.5 | % v/v | MICRO 1 | B | | | | | | |
| 11 | Betamix | 1.3 | EC | 8 | fl oz/a | MICRO 2 | C | | | | | | |
| 11 | Upbeet | 50 | DF | 0.125 | oz/a | MICRO 2 | C | | | | | | |
| 11 | Stinger | 3 | L | 1 | fl oz/a | MICRO 2 | C | | | | | | |
| 11 | MSO | | L | 1.5 | % v/v | MICRO 2 | C | | | | | | |
| 11 | Betamix | 1.3 | EC | 8 | fl oz/a | MICRO 3 | E | | | | | | |
| 11 | Upbeet | 50 | DF | 0.125 | oz/a | MICRO 3 | E | | | | | | |
| 11 | Stinger | 3 | L | 1 | fl oz/a | MICRO 3 | E | | | | | | |
| 11 | MSO | | L | 1.5 | % v/v | MICRO 3 | E | | | | | | |
| 11 | Betamix | 1.3 | EC | 8 | fl oz/a | MICRO 4 | F | | | | | | |
| 11 | Upbeet | 50 | DF | 0.125 | oz/a | MICRO 4 | F | | | | | | |
| 11 | Stinger | 3 | L | 1 | fl oz/a | MICRO 4 | F | | | | | | |
| 11 | MSO | | L | 1.5 | % v/v | MICRO 4 | F | | | | | | |
| 12 | Betamix | 1.3 | EC | 2 | pt/a | STD 1 | C | 83 | 0 | 95 | 92 | 84 | 220 |
| 12 | Upbeet | 50 | DF | 0.5 | oz/a | STD 1 | C | | | | | | |
| 12 | Stinger | 3 | L | 4 | fl oz/a | STD 1 | C | | | | | | |
| 12 | Betamix | 1.3 | EC | 3 | pt/a | STD 2 | E | | | | | | |
| 12 | Upbeet | 50 | DF | 0.5 | oz/a | STD 2 | E | | | | | | |
| 12 | Stinger | 3 | L | 4 | fl oz/a | STD 2 | E | | | | | | |
| 12 | Activator 90 (NIS) | | L | 0.25 | % v/v | STD 2 | E | | | | | | |
| LSD (P=.05) | | | | | | | | 4.7 | 3.8 | 10.5 | 8.4 | 11.2 | 35.7 |
| Standard Deviation | | | | | | | | 3.2 | 2.6 | 7.3 | 5.8 | 7.8 | 24.7 |
| CV | | | | | | | | 3.97 | 47.35 | 8.32 | 6.54 | 8.89 | 11.31 |

MSU Weed Science Research Program

Weed Control Systems in Roundup Ready Sugarbeets

Trial ID: SB04-07

Study Dir.: Sprague, Powell

Conducted: Bean & Beet Farm

Investigator: Christy Sprague

Weed Code

Crop Code

Rating Data Type

Rating Unit

Rating Date

Trt-Eval Interval

| BETVU % Sugar | BETVU yield ton/acre | BETVU RWST # / ton | BETVU RWSA # / acre |
|------------------|----------------------------|--------------------------|---------------------------|
| 9/25/07 | 9/25/07 | 9/25/07 | 9/25/07 |
| 157 DA-A | 157 DA-A | 157 DA-A | 157 DA-A |

| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Grow Stg | Appl Code | BETVU % Sugar | BETVU yield ton/acre | BETVU RWST # / ton | BETVU RWSA # / acre |
|---------|---------------------|-----------|-----------|------|------------|----------|-----------|---------------|----------------------|--------------------|---------------------|
| 1 | Nortron | 4 | SC | 3 | pt/a | PRE | A | 18.1 | 26.8 | 269.9 | 7231.2 |
| 1 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MPOS | G | | | | |
| 1 | AMS | | WG | 17 | lb/100 gal | MPOS | G | | | | |
| 1 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | |
| 1 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | |
| 2 | Dual Magnum | 7.64 | EC | 1.33 | pt/a | PRE | A | 17.8 | 27.9 | 259.4 | 7255.7 |
| 2 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MPOS | G | | | | |
| 2 | AMS | | WG | 17 | lb/100 gal | MPOS | G | | | | |
| 2 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | |
| 2 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | |
| 3 | KIH-485 | 85 | WG | 2 | oz/a | PRE | A | 16.9 | 16.6 | 243.6 | 4051.2 |
| 3 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MPOS | G | | | | |
| 3 | AMS | | WG | 17 | lb/100 gal | MPOS | G | | | | |
| 3 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | |
| 3 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | |
| 4 | Untreated | | | | | | | 19.0 | 10.5 | 286.1 | 3046.6 |
| 5 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 18.3 | 28.2 | 271.2 | 7646.4 |
| 5 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | |
| 5 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | |
| 5 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | |
| 5 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | |
| 5 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | |
| 6 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 17.9 | 29.6 | 265.0 | 7827.3 |
| 6 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | |
| 6 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | |
| 6 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | |
| 7 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 17.6 | 29.2 | 257.7 | 7512.3 |
| 7 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | |
| 7 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | |
| 7 | KIH-485 | 85 | WG | 2 | oz/a | POST | H | | | | |
| 7 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | |
| 8 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 17.0 | 29.4 | 246.2 | 7361.7 |
| 8 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | |
| 8 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | |
| 8 | Outlook | 6 | EC | 16 | fl oz/a | POST | H | | | | |
| 8 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | |
| 9 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | EPOS | D | 17.5 | 29.8 | 260.2 | 7769.2 |
| 9 | AMS | | WG | 17 | lb/100 gal | EPOS | D | | | | |
| 9 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | POST | H | | | | |
| 9 | Dual Magnum | 7.64 | EC | 1.33 | pt/a | POST | H | | | | |
| 9 | AMS | | WG | 17 | lb/100 gal | POST | H | | | | |
| 10 | Weed-Free | | | | | | | 17.9 | 30.3 | 262.7 | 7962.0 |
| 10 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MICRO 2 | C | | | | |
| 10 | AMS | | WG | 17 | lb/100 gal | MICRO 2 | C | | | | |
| 10 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | MPOS | G | | | | |
| 10 | AMS | | WG | 17 | lb/100 gal | MPOS | G | | | | |
| 10 | Roundup OriginalMax | 4.5 | SL | 22 | fl oz/a | LPOS | I | | | | |
| 10 | AMS | | WG | 17 | lb/100 gal | LPOS | I | | | | |

MSU Weed Science Research Program

Weed Control Systems in Roundup Ready Sugarbeets

Trial ID: SB04-07

Study Dir.: Sprague, Powell

Conducted: Bean & Beet Farm

Investigator: Christy Sprague

Weed Code
Crop Code
Rating Data Type
Rating Unit
Rating Date
Trt-Eval Interval

BETVU BETVU BETVU BETVU
% Sugar yield RWST RWSA
ton/acre # / ton # / acre
9/25/07 9/25/07 9/25/07 9/25/07
157 DA-A 157 DA-A 157 DA-A 157 DA-A

| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Grow Stg | Appl Code | BETVU % Sugar | BETVU yield ton/acre | BETVU RWST # / ton | BETVU RWSA # / acre |
|--------------------|--------------------|-----------|-----------|-------|-----------|----------|-----------|---------------|----------------------|--------------------|---------------------|
| 11 | Betamix | 1.3 | EC | 8 | fl oz/a | MICRO 1 | B | 17.6 | 24.9 | 261.0 | 6510.6 |
| 11 | Upbeet | 50 | DF | 0.125 | oz/a | MICRO 1 | B | | | | |
| 11 | Stinger | 3 | L | 1 | fl oz/a | MICRO 1 | B | | | | |
| 11 | MSO | | L | 1.5 | % v/v | MICRO 1 | B | | | | |
| 11 | Betamix | 1.3 | EC | 8 | fl oz/a | MICRO 2 | C | | | | |
| 11 | Upbeet | 50 | DF | 0.125 | oz/a | MICRO 2 | C | | | | |
| 11 | Stinger | 3 | L | 1 | fl oz/a | MICRO 2 | C | | | | |
| 11 | MSO | | L | 1.5 | % v/v | MICRO 2 | C | | | | |
| 11 | Betamix | 1.3 | EC | 8 | fl oz/a | MICRO 3 | E | | | | |
| 11 | Upbeet | 50 | DF | 0.125 | oz/a | MICRO 3 | E | | | | |
| 11 | Stinger | 3 | L | 1 | fl oz/a | MICRO 3 | E | | | | |
| 11 | MSO | | L | 1.5 | % v/v | MICRO 3 | E | | | | |
| 11 | Betamix | 1.3 | EC | 8 | fl oz/a | MICRO 4 | F | | | | |
| 11 | Upbeet | 50 | DF | 0.125 | oz/a | MICRO 4 | F | | | | |
| 11 | Stinger | 3 | L | 1 | fl oz/a | MICRO 4 | F | | | | |
| 11 | MSO | | L | 1.5 | % v/v | MICRO 4 | F | | | | |
| 12 | Betamix | 1.3 | EC | 2 | pt/a | STD 1 | C | 17.1 | 26.2 | 249.9 | 6553.1 |
| 12 | Upbeet | 50 | DF | 0.5 | oz/a | STD 1 | C | | | | |
| 12 | Stinger | 3 | L | 4 | fl oz/a | STD 1 | C | | | | |
| 12 | Betamix | 1.3 | EC | 3 | pt/a | STD 2 | E | | | | |
| 12 | Upbeet | 50 | DF | 0.5 | oz/a | STD 2 | E | | | | |
| 12 | Stinger | 3 | L | 4 | fl oz/a | STD 2 | E | | | | |
| 12 | Activator 90 (NIS) | | L | 0.25 | % v/v | STD 2 | E | | | | |
| LSD (P=.05) | | | | | | | | 1.08 | 3.51 | 20.58 | 1023.24 |
| Standard Deviation | | | | | | | | 0.75 | 2.43 | 14.25 | 708.66 |
| CV | | | | | | | | 4.21 | 9.42 | 5.46 | 10.53 |