

Soybean Herbicide Program: Cost-Based Solution.

Trial ID: 11-DSO-Cost Location: De Soto, IL

Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu
 City State Zip Country: De Soto IL 62924 USA
 Trial Status: FINAL Initiation Date: 5-20-11

Objectives: Determine the success of herbicide programs within three different cost ranges that may be used by growers during the herbicide selection process.

Crop 1: GLXMA Soybean Variety: AG 4005 Description: RR
 Planting Method: SEEDED Planting Date: 5-20-11
 Rate, Unit: 75 LB/A Depth, Unit: 1.0 IN
 Row Spacing, Unit: 30 IN

Pest 1 Type: W Code: AMATA Amaranthus rudis Sauer waterhemp, common
 Pest Description: glyphosate-resistant waterhemp

Plot Width, Unit: 10 FT Site Type: FIELD
 Plot Length, Unit: 30 FT Tillage Type: NO-TILL
 Replications: 3 Study Design: Randomized Complete Block

Prior Crops, Year
 1. GLXMA 2010

Field Prep./Maintenance: N 0 LB/A, P205 0 LB/A, K20 0 LB/A

% Sand: 15.4 % OM: 2.4 Texture: SILT LOAM
 % Silt: 64.7 pH: 6.1 Soil Name: OKAW
 % Clay: 19.9 CEC: 10.5 Fert. Level: P1 53 LB/A, K 352 LB/A

| | Application Description | | | |
|----------------------------|-------------------------|---------|---------|---------|
| | A | B | C | D |
| Application Date: | 5-20-11 | 6-13-11 | 6-22-11 | 6-30-11 |
| Time of Day: | 18:00 | 15:15 | 8:00 | 14:45 |
| Application Method: | Spray | Spray | Spray | Spray |
| Application Timing: | PRE | POST1 | POST2 | POST3 |
| Application Placement: | BROFOL | BROFOL | BROFOL | BROFOL |
| Applied By: | LAH | LAH | MJA | CME |
| Air Temperature, Unit: | 84 F | 83 F | 80 F | 93 F |
| % Relative Humidity: | 50 | 46 | 60 | 53 |
| Wind Velocity, Unit: | 3 MPH | 3 MPH | 3 MPH | 1 MPH |
| Wind Direction: | S | NW | W | E |
| Dew Presence (Y/N): | N | N | Y | N |
| Soil Temperature, Unit: | 74 F | 89 F | 75 F | 82 F |
| Soil Moisture: | NORMAL | BELNOR | NORMAL | NORMAL |
| % Cloud Cover: | 100 | 80 | 15 | 0 |
| | 20-5-11 | 13-6-11 | 22-6-11 | 30-6-11 |
| Crop stage at application: | NA | V2 | V4-V5 | V5-V6 |
| Height Min, Max (inch): | | 5 9 | 6 12 | 10 17 |

| | Pest Stage At Each Application | | | |
|--------------------------|--------------------------------|---------|---------|---------|
| | 5-20-11 | 6-13-11 | 6-22-11 | 6-30-11 |
| Application Date: | 5-20-11 | 6-13-11 | 6-22-11 | 6-30-11 |
| Weed Code: | AMATA | AMATA | AMATA | AMATA |
| Stage Majority (leaves): | NA | 5 | 7 | 5 |
| Stage Min, Max: | | coty 10 | 2 14 | 2 22 |
| Height Majority: | | 3 IN | 4 IN | 4 IN |
| Height Min, Max: | | 0.5 6 | 1 12 | 1 15 |
| Density, Unit: | | 10 FT2 | 4 FT2 | 1 FT2 |

| | Application Equipment | | | |
|---------------------|-----------------------|-------------|-------------|-------------|
| | 1 | 2 | 3 | 4 |
| Appl. Equipment: | CO2 sprayer | CO2 sprayer | CO2 sprayer | CO2 sprayer |
| Operating Pressure: | 30 PSI | 30 PSI | 30 PSI | 30 PSI |
| Nozzle Type: | Flat fan | Flat fan | Flat fan | Flat fan |
| Nozzle Size: | XR 8002 | XR 8002 | XR 8002 | XR 8002 |
| Boom Length, Unit: | 6.67 FT | 6.67 FT | 6.67 FT | 6.67 FT |
| Spray Volume, Unit: | 15 GPA | 15 GPA | 15 GPA | 15 GPA |

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| | | | | | | | | | | | | | | | | | | | | |
|-------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Pest Code | | | | | | | | | | | | | | | | | | | | |
| Crop Code | | | | | | | | | | | | | | | | | | | | |
| Rating Date | | | | | | | | | | | | | | | | | | | | |
| Rating Data Type | | | | | | | | | | | | | | | | | | | | |
| Rating Unit | | | | | | | | | | | | | | | | | | | | |
| Rating Timing | | | | | | | | | | | | | | | | | | | | |
| Trt-Eval Interval | | | | | | | | | | | | | | | | | | | | |

| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Other Rate | Other Rate Unit | Growth Stage | Appl Code | GLXMA 10-23-11 Moisture Percent | GLXMA 10-23-11 Test wt. lb/bu | GLXMA 10-23-11 Yield bu/A | GLXMA 6-22-11 Injury Percent | GLXMA 7-6-11 Injury Percent | GLXMA 7-20-11 Injury Percent | GLXMA 10-5-11 Injury Percent | EOS |
|---------|-----------------------|-----------|-----------|--------|-----------|------------|-----------------|--------------|-----------|---------------------------------|-------------------------------|---------------------------|------------------------------|-----------------------------|------------------------------|------------------------------|-----|
| 1 | \$22 TO \$24 PROGRAMS | | | | | | | | | 14.9 b | 54.4 a | 50 a | 0 f | 0 e | 0 b | 0 a | |
| 1 | AUTHORITY FIRST | 70 | WG | 0.141 | lb ai/a | 3.2 | oz/a | PRE | A | | | | | | | | |
| 1 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | | | |
| 1 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | | | |
| 2 | \$22 TO \$24 PROGRAMS | | | | | | | | | 15.1 b | 54.4 a | 49 a | 0 f | 0 e | 0 b | 0 a | |
| 2 | AUTHORITY MTZ | 45 | WG | 0.31 | lb ai/a | 11 | oz/a | PRE | A | | | | | | | | |
| 2 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | | | |
| 2 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | | | |
| 3 | \$22 TO \$24 PROGRAMS | | | | | | | | | 14.9 b | 54.4 a | 48 a | 0 f | 0 e | 0 b | 0 a | |
| 3 | AUTHORITY ASSIST | 4 | SL | 0.156 | lb ai/a | 5.0 | fl oz/a | PRE | A | | | | | | | | |
| 3 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | | | |
| 3 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | | | |
| 4 | \$22 TO \$24 PROGRAMS | | | | | | | | | 15.8 ab | 53.8 ab | 48 a | 0 f | 0 e | 0 b | 0 a | |
| 4 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | | | |
| 4 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST1 | B | | | | | | | | |
| 4 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST3 | D | | | | | | | | |
| 4 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST3 | D | | | | | | | | |
| 5 | \$22 TO \$24 PROGRAMS | | | | | | | | | 15.4 ab | 54.2 ab | 33 cd | 24 a | 13 bc | 0 b | 0 a | |
| 5 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | | | |
| 5 | COBRA | 2 | EC | 0.125 | lb ai/a | 8 | fl oz/a | POST1 | B | | | | | | | | |
| 5 | SUPERB HC | 100 | SL | 0.5 | % v/v | 0.5 | % v/v | POST1 | B | | | | | | | | |
| 5 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST1 | B | | | | | | | | |
| 6 | \$22 TO \$24 PROGRAMS | | | | | | | | | 15.0 b | 54.4 a | 40 bc | 4 e | 0 e | 0 b | 0 a | |
| 6 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | | | |
| 6 | FIRSTRATE | 84 | WG | 0.0158 | lb ai/a | 0.3 | oz/a | POST1 | B | | | | | | | | |
| 6 | SUPERB HC | 100 | SL | 0.5 | % v/v | 0.5 | % v/v | POST1 | B | | | | | | | | |
| 6 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST1 | B | | | | | | | | |
| 7 | \$22 TO \$24 PROGRAMS | | | | | | | | | 15.0 b | 54.4 a | 44 ab | 18 c | 4 de | 0 b | 0 a | |
| 7 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | | | |
| 7 | PREFIX | 5.29 | EC | 1.32 | lb ai/a | 2.0 | pt/a | POST1 | B | | | | | | | | |
| 7 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST1 | B | | | | | | | | |
| 8 | \$34 TO \$36 PROGRAMS | | | | | | | | | 15.2 b | 54.3 a | 51 a | 0 f | 0 e | 0 b | 0 a | |
| 8 | AUTHORITY FIRST | 70 | WG | 0.282 | lb ai/a | 6.4 | oz/a | PRE | A | | | | | | | | |
| 8 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | | | |
| 8 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | | | |
| 9 | \$34 TO \$36 PROGRAMS | | | | | | | | | 15.0 b | 54.4 a | 52 a | 0 f | 0 e | 0 b | 0 a | |
| 9 | AUTHORITY FIRST | 70 | WG | 0.14 | lb ai/a | 3.2 | oz/a | PRE | A | | | | | | | | |
| 9 | PROWL H2O | 3.8 | CS | 0.95 | lb ai/a | 2.0 | pt/a | PRE | A | | | | | | | | |
| 9 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | | | |
| 9 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | | | |
| 10 | \$34 TO \$36 PROGRAMS | | | | | | | | | 15.1 b | 54.4 a | 49 a | 0 f | 0 e | 0 b | 0 a | |
| 10 | CANOPY | 75 | WG | 0.14 | lb ai/a | 3.0 | oz/a | PRE | A | | | | | | | | |
| 10 | PREFIX | 5.29 | EC | 1.32 | lb ai/a | 2.0 | pt/a | PRE | A | | | | | | | | |
| 10 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | | | |
| 10 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | | | |
| 11 | \$34 TO \$36 PROGRAMS | | | | | | | | | 14.9 b | 54.4 a | 46 ab | 0 f | 2 e | 0 b | 0 a | |
| 11 | AUTHORITY FIRST | 70 | WG | 0.141 | lb ai/a | 3.2 | oz/a | PRE | A | | | | | | | | |
| 11 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | | | |
| 11 | COBRA | 2 | EC | 0.125 | lb ai/a | 8 | fl oz/a | POST2 | C | | | | | | | | |
| 11 | SUPERB HC | 100 | SL | 0.5 | % v/v | 0.5 | % v/v | POST2 | C | | | | | | | | |
| 11 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | | | |
| 12 | \$34 TO \$36 PROGRAMS | | | | | | | | | 15.5 ab | 54.1 ab | 49 a | 0 f | 0 e | 0 b | 0 a | |
| 12 | AUTHORITY FIRST | 70 | WG | 0.141 | lb ai/a | 3.2 | oz/a | PRE | A | | | | | | | | |
| 12 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | | | |
| 12 | PREFIX | 5.29 | EC | 1.32 | lb ai/a | 2 | pt/a | POST2 | C | | | | | | | | |
| 12 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | | | |

Southern Illinois University

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Trial ID: 11-DSO-Cost Location: De Soto, IL

| Pest Code | | Crop Code | | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | GLXMA | | | | | |
|-------------------|-----------------------|-----------|-----------|----------|-----------|------------|-----------------|--------------|-----------|---------|---------|--------|---------|--------|--------|--------|
| Rating Date | | 10-23-11 | 10-23-11 | 10-23-11 | 6-22-11 | 7-6-11 | 7-20-11 | 10-5-11 | | | | | | | | |
| Rating Data Type | | Moisture | Test wt. | Yield | Injury | Injury | Injury | Injury | | | | | | | | |
| Rating Unit | | Percent | lb/bu | bu/A | Percent | Percent | Percent | Percent | | | | | | | | |
| Rating Timing | | | | 9 DA-B | | 6 DA-D | 20 DA-D | | | | | | | | | |
| Trt-Eval Interval | | | | 0 DA-C | | 14 DA-C | 28 DA-C | EOS | | | | | | | | |
| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Other Rate | Other Rate Unit | Growth Stage | Appl Code | | | | | | | |
| 13 | \$34 TO \$36 PROGRAMS | | | | | | | | | 15.6 ab | 53.9 ab | 50 a | 16 d | 7 cde | 0 b | 0 a |
| 13 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | | |
| 13 | FIRSTRATE | 84 | WG | 0.0158 | lb ai/a | 0.3 | oz/a | POST1 | B | | | | | | | |
| 13 | PREFIX | 5.29 | EC | 1.32 | lb ai/a | 2 | pt/a | POST1 | B | | | | | | | |
| 13 | N-PAK AMS | 100 | SL | | 5 % v/v | 5 | % v/v | POST1 | B | | | | | | | |
| 14 | \$34 TO \$36 PROGRAMS | | | | | | | | | 16.7 a | 53.4 b | 47 a | 0 f | 18 ab | 2 ab | 0 a |
| 14 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | | |
| 14 | N-PAK AMS | 100 | SL | | 5 % v/v | 5 | % v/v | POST1 | B | | | | | | | |
| 14 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST3 | D | | | | | | | |
| 14 | COBRA | 2 | EC | 0.125 | lb ai/a | 8 | fl oz/a | POST3 | D | | | | | | | |
| 14 | SUPERB HC | 100 | SL | | 0.5 % v/v | 0.5 | % v/v | POST3 | D | | | | | | | |
| 14 | N-PAK AMS | 100 | SL | | 5 % v/v | 5 | % v/v | POST3 | D | | | | | | | |
| 15 | \$34 TO \$36 PROGRAMS | | | | | | | | | 15.1 b | 54.3 a | 50 a | 25 a | 10 cd | 3 a | 0 a |
| 15 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | | |
| 15 | COBRA | 2 | EC | 0.125 | lb ai/a | 8 | fl oz/a | POST1 | B | | | | | | | |
| 15 | SUPERB HC | 100 | SL | | 0.5 % v/v | 0.5 | % v/v | POST1 | B | | | | | | | |
| 15 | N-PAK AMS | 100 | SL | | 5 % v/v | 5 | % v/v | POST1 | B | | | | | | | |
| 15 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST3 | D | | | | | | | |
| 15 | N-PAK AMS | 100 | SL | | 5 % v/v | 5 | % v/v | POST3 | D | | | | | | | |
| 16 | \$34 TO \$36 PROGRAMS | | | | | | | | | 15.1 b | 54.3 a | 48 a | 20 b | 5 de | 0 b | 0 a |
| 16 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | | |
| 16 | PREFIX | 5.29 | EC | 1.32 | lb ai/a | 2.0 | pt/a | POST1 | B | | | | | | | |
| 16 | N-PAK AMS | 100 | SL | | 5 % v/v | 5 | % v/v | POST1 | B | | | | | | | |
| 16 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST3 | D | | | | | | | |
| 16 | N-PAK AMS | 100 | SL | | 5 % v/v | 5 | % v/v | POST3 | D | | | | | | | |
| 17 | \$46 TO \$48 PROGRAMS | | | | | | | | | 15.1 b | 54.3 a | 51 a | 0 f | 0 e | 0 b | 0 a |
| 17 | AUTHORITY FIRST | 70 | WG | 0.282 | lb ai/a | 6.4 | oz/a | PRE | A | | | | | | | |
| 17 | PROWL H2O | 3.8 | CS | 0.95 | lb ai/a | 2.0 | pt/a | PRE | A | | | | | | | |
| 17 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | | |
| 17 | N-PAK AMS | 100 | SL | | 5 % v/v | 5 | % v/v | POST2 | C | | | | | | | |
| 18 | \$46 TO \$48 PROGRAMS | | | | | | | | | 15.1 b | 54.3 a | 51 a | 0 f | 0 e | 0 b | 0 a |
| 18 | AUTHORITY FIRST | 70 | WG | 0.28 | lb ai/a | 6.4 | oz/a | PRE | A | | | | | | | |
| 18 | BOUNDARY | 6.5 | EC | 1.22 | lb ai/a | 1.5 | pt/a | PRE | A | | | | | | | |
| 18 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | | |
| 18 | N-PAK AMS | 100 | SL | | 5 % v/v | 5 | % v/v | POST2 | C | | | | | | | |
| 19 | \$46 TO \$48 PROGRAMS | | | | | | | | | 15.0 b | 54.4 a | 48 a | 0 f | 0 e | 0 b | 0 a |
| 19 | AUTHORITY FIRST | 70 | WG | 0.282 | lb ai/a | 6.4 | oz/a | PRE | A | | | | | | | |
| 19 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | | |
| 19 | COBRA | 2 | EC | 0.125 | lb ai/a | 8 | fl oz/a | POST2 | C | | | | | | | |
| 19 | SUPERB HC | 100 | SL | | 0.5 % v/v | 0.5 | % v/v | POST2 | C | | | | | | | |
| 19 | N-PAK AMS | 100 | SL | | 5 % v/v | 5 | % v/v | POST2 | C | | | | | | | |
| 20 | \$46 TO \$48 PROGRAMS | | | | | | | | | 15.0 b | 54.4 a | 47 ab | 18 c | 23 a | 2 ab | 0 a |
| 20 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | | |
| 20 | PREFIX | 5.29 | EC | 1.32 | lb ai/a | 2.0 | pt/a | POST1 | B | | | | | | | |
| 20 | N-PAK AMS | 100 | SL | | 5 % v/v | 5 | % v/v | POST1 | B | | | | | | | |
| 20 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST3 | D | | | | | | | |
| 20 | COBRA | 2 | EC | 0.125 | lb ai/a | 8 | fl oz/a | POST3 | D | | | | | | | |
| 20 | SUPERB HC | 100 | SL | | 0.5 % v/v | 0.5 | % v/v | POST3 | D | | | | | | | |
| 20 | N-PAK AMS | 100 | SL | | 5 % v/v | 5 | % v/v | POST3 | D | | | | | | | |
| 21 | NONTREATED | | | | | | | | | 15.5 ab | 54.1 ab | 26 d | 0 f | 0 e | 0 b | 0 a |
| 22 | WEED FREE | | | | | | | | | 15.1 b | 54.3 a | 49 a | 0 f | 0 e | 0 b | 0 a |
| 22 | AUTHORITY FIRST | 70 | WG | 0.28 | lb ai/a | 6.4 | oz/a | PRE | A | | | | | | | |
| 22 | DUAL MAGNUM | 7.62 | EC | 1.27 | lb ai/a | 1.33 | pt/a | PRE | A | | | | | | | |
| 22 | HANDWEED AS NEEDED | | | | | | | | | | | | | | | |
| LSD (P=.05) | | | | | | | | | | 1.39 | 0.85 | 7.3 | 1.7 | 7.5 | 1.8 | 0.0 |
| Replicate F | | | | | | | | | | 2.304 | 2.356 | 11.965 | 1.059 | 4.294 | 0.119 | 0.000 |
| Replicate Prob(F) | | | | | | | | | | 0.1123 | 0.1072 | 0.0001 | 0.3564 | 0.0205 | 0.8879 | 1.0000 |
| Treatment F | | | | | | | | | | 0.706 | 0.783 | 6.012 | 250.788 | 6.417 | 1.378 | 0.000 |
| Treatment Prob(F) | | | | | | | | | | 0.8027 | 0.7222 | 0.0001 | 0.0001 | 0.0001 | 0.1875 | 1.0000 |

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| | | | | | | | | | | | | |
|-------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Pest Code | | | | | | | | | | | | |
| Crop Code | | | | | | | | | | | | |
| Rating Date | | | | | | | | | | | | |
| Rating Data Type | | | | | | | | | | | | |
| Rating Unit | | | | | | | | | | | | |
| Rating Timing | | | | | | | | | | | | |
| Trt-Eval Interval | | | | | | | | | | | | |

| Trt No. | Treatment Name | Form Conc | Form Type | Rate Rate | Rate Unit | Other Rate | Other Rate | Other Unit | Growth Stage | Appl Code |
|---------|----------------|-----------|-----------|-----------|-----------|------------|------------|------------|--------------|-----------|
|---------|----------------|-----------|-----------|-----------|-----------|------------|------------|------------|--------------|-----------|

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

Soybean Herbicide Program: Cost-Based Solution.

Trial ID: 11-DSO-Cost Location: De Soto, IL

| Pest Code | | | | | | | | | | AMATA-HR | AMATA-HR | AMATA-HR | AMATA-HR | AMATA-HR | AMBTR |
|-------------------|-----------------------|-----------|-----------|--------|-----------|------------|-----------------|--------------|-----------|----------|----------|----------|----------|----------|---------|
| Crop Code | | | | | | | | | | 6-22-11 | 7-6-11 | 7-20-11 | 10-5-11 | 10-5-11 | 10-5-11 |
| Rating Date | | | | | | | | | | Control | Control | Control | Control | Plants | Plants |
| Rating Data Type | | | | | | | | | | Percent | Percent | Percent | Percent | 0.5 m2 | 0.5 m2 |
| Rating Unit | | | | | | | | | | 9 DA-B | 6 DA-D | 20 DA-D | | | |
| Rating Timing | | | | | | | | | | 0 DA-C | 14 DA-C | 28 DA-C | EOS | EOS | EOS |
| Trt-Eval Interval | | | | | | | | | | | | | | | |
| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Other Rate | Other Rate Unit | Growth Stage | Appl Code | | | | | | |
| 1 | \$22 TO \$24 PROGRAMS | | | | | | | | | 84 a-d | 93 a | 93 abc | 95 a | 1.0 de | 0.0 c |
| 1 | AUTHORITY FIRST | 70 | WG | 0.141 | lb ai/a | 3.2 | oz/a | PRE | A | | | | | | |
| 1 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | |
| 1 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | |
| 2 | \$22 TO \$24 PROGRAMS | | | | | | | | | 65 e | 82 bc | 83 bcd | 90 a | 1.0 de | 0.3 c |
| 2 | AUTHORITY MTZ | 45 | WG | 0.31 | lb ai/a | 11 | oz/a | PRE | A | | | | | | |
| 2 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | |
| 2 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | |
| 3 | \$22 TO \$24 PROGRAMS | | | | | | | | | 75 cde | 81 bc | 80 cde | 83 a | 1.2 de | 0.0 c |
| 3 | AUTHORITY ASSIST | 4 | SL | 0.156 | lb ai/a | 5.0 | fl oz/a | PRE | A | | | | | | |
| 3 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | |
| 3 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | |
| 4 | \$22 TO \$24 PROGRAMS | | | | | | | | | 70 de | 74 c | 72 de | 63 b | 5.7 bc | 0.0 c |
| 4 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | |
| 4 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST1 | B | | | | | | |
| 4 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST3 | D | | | | | | |
| 4 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST3 | D | | | | | | |
| 5 | \$22 TO \$24 PROGRAMS | | | | | | | | | 98 a | 77 c | 67 e | 50 b | 4.5 bcd | 4.3 a |
| 5 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | |
| 5 | COBRA | 2 | EC | 0.125 | lb ai/a | 8 | fl oz/a | POST1 | B | | | | | | |
| 5 | SUPERB HC | 100 | SL | 0.5 | % v/v | 0.5 | % v/v | POST1 | B | | | | | | |
| 5 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST1 | B | | | | | | |
| 6 | \$22 TO \$24 PROGRAMS | | | | | | | | | 70 de | 53 d | 45 f | 13 c | 8.5 b | 0.0 c |
| 6 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | |
| 6 | FIRSTRATE | 84 | WG | 0.0158 | lb ai/a | 0.3 | oz/a | POST1 | B | | | | | | |
| 6 | SUPERB HC | 100 | SL | 0.5 | % v/v | 0.5 | % v/v | POST1 | B | | | | | | |
| 6 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST1 | B | | | | | | |
| 7 | \$22 TO \$24 PROGRAMS | | | | | | | | | 96 a | 92 a | 90 abc | 86 a | 2.7 cde | 0.2 c |
| 7 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | |
| 7 | PREFIX | 5.29 | EC | 1.32 | lb ai/a | 2.0 | pt/a | POST1 | B | | | | | | |
| 7 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST1 | B | | | | | | |
| 8 | \$34 TO \$36 PROGRAMS | | | | | | | | | 92 abc | 96 a | 97 ab | 98 a | 0.0 e | 0.0 c |
| 8 | AUTHORITY FIRST | 70 | WG | 0.282 | lb ai/a | 6.4 | oz/a | PRE | A | | | | | | |
| 8 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | |
| 8 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | |
| 9 | \$34 TO \$36 PROGRAMS | | | | | | | | | 87 a-d | 89 ab | 89 abc | 93 a | 0.8 de | 0.2 c |
| 9 | AUTHORITY FIRST | 70 | WG | 0.14 | lb ai/a | 3.2 | oz/a | PRE | A | | | | | | |
| 9 | PROWL H2O | 3.8 | CS | 0.95 | lb ai/a | 2.0 | pt/a | PRE | A | | | | | | |
| 9 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | |
| 9 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | |
| 10 | \$34 TO \$36 PROGRAMS | | | | | | | | | 45 f | 91 ab | 93 abc | 94 a | 0.5 de | 0.0 c |
| 10 | CANOPY | 75 | WG | 0.14 | lb ai/a | 3.0 | oz/a | PRE | A | | | | | | |
| 10 | PREFIX | 5.29 | EC | 1.32 | lb ai/a | 2.0 | pt/a | PRE | A | | | | | | |
| 10 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | |
| 10 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | |
| 11 | \$34 TO \$36 PROGRAMS | | | | | | | | | 78 b-e | 97 a | 97 ab | 98 a | 0.0 e | 0.3 c |
| 11 | AUTHORITY FIRST | 70 | WG | 0.141 | lb ai/a | 3.2 | oz/a | PRE | A | | | | | | |
| 11 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | |
| 11 | COBRA | 2 | EC | 0.125 | lb ai/a | 8 | fl oz/a | POST2 | C | | | | | | |
| 11 | SUPERB HC | 100 | SL | 0.5 | % v/v | 0.5 | % v/v | POST2 | C | | | | | | |
| 11 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | |
| 12 | \$34 TO \$36 PROGRAMS | | | | | | | | | 78 b-e | 97 a | 97 ab | 98 a | 0.0 e | 0.0 c |
| 12 | AUTHORITY FIRST | 70 | WG | 0.141 | lb ai/a | 3.2 | oz/a | PRE | A | | | | | | |
| 12 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | |
| 12 | PREFIX | 5.29 | EC | 1.32 | lb ai/a | 2 | pt/a | POST2 | C | | | | | | |
| 12 | N-PAK AMS | 100 | SL | 5 | % v/v | 5 | % v/v | POST2 | C | | | | | | |

Southern Illinois University

Soybean Herbicide Program: Cost-Based Solution.

Trial ID: 11-DSO-Cost Location: De Soto, IL

| | | | | | | | | | | AMATA-HR | AMATA-HR | AMATA-HR | AMATA-HR | AMATA-HR | AMBTR |
|-------------------|-----------------------|-----------|-----------|--------|-----------|------------|-----------------|--------------|-----------|----------|----------|----------|----------|----------|---------|
| Pest Code | Crop Code | | | | | | | | | 6-22-11 | 7-6-11 | 7-20-11 | 10-5-11 | 10-5-11 | 10-5-11 |
| Rating Date | Rating Data Type | | | | | | | | | Control | Control | Control | Control | Plants | Plants |
| Rating Unit | Rating Timing | | | | | | | | | Percent | Percent | Percent | Percent | 0.5 m2 | 0.5 m2 |
| Trt-Eval Interval | | | | | | | | | | 9 DA-B | 6 DA-D | 20 DA-D | | | |
| | | | | | | | | | | 0 DA-C | 14 DA-C | 28 DA-C | EOS | EOS | EOS |
| Trt No. | Treatment Name | Form Conc | Form Type | Rate | Rate Unit | Other Rate | Other Rate Unit | Growth Stage | Appl Code | | | | | | |
| 13 | \$34 TO \$36 PROGRAMS | | | | | | | | | 97 a | 91 ab | 86 a-d | 87 a | 2.0 cde | 0.0 c |
| 13 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | |
| 13 | FIRSTRATE | 84 | WG | 0.0158 | lb ai/a | 0.3 | oz/a | POST1 | B | | | | | | |
| 13 | PREFIX | 5.29 | EC | 1.32 | lb ai/a | 2 | pt/a | POST1 | B | | | | | | |
| 13 | N-PAK AMS | 100 | SL | | % v/v | 5 | % v/v | POST1 | B | | | | | | |
| 14 | \$34 TO \$36 PROGRAMS | | | | | | | | | 70 de | 97 a | 97 ab | 98 a | 0.0 e | 0.0 c |
| 14 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | |
| 14 | N-PAK AMS | 100 | SL | | % v/v | 5 | % v/v | POST1 | B | | | | | | |
| 14 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST3 | D | | | | | | |
| 14 | COBRA | 2 | EC | 0.125 | lb ai/a | 8 | fl oz/a | POST3 | D | | | | | | |
| 14 | SUPERB HC | 100 | SL | | % v/v | 0.5 | % v/v | POST3 | D | | | | | | |
| 14 | N-PAK AMS | 100 | SL | | % v/v | 5 | % v/v | POST3 | D | | | | | | |
| 15 | \$34 TO \$36 PROGRAMS | | | | | | | | | 98 a | 97 a | 95 ab | 96 a | 0.0 e | 0.0 c |
| 15 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | |
| 15 | COBRA | 2 | EC | 0.125 | lb ai/a | 8 | fl oz/a | POST1 | B | | | | | | |
| 15 | SUPERB HC | 100 | SL | | % v/v | 0.5 | % v/v | POST1 | B | | | | | | |
| 15 | N-PAK AMS | 100 | SL | | % v/v | 5 | % v/v | POST1 | B | | | | | | |
| 15 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST3 | D | | | | | | |
| 15 | N-PAK AMS | 100 | SL | | % v/v | 5 | % v/v | POST3 | D | | | | | | |
| 16 | \$34 TO \$36 PROGRAMS | | | | | | | | | 97 a | 96 a | 96 ab | 98 a | 0.2 de | 0.3 c |
| 16 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | |
| 16 | PREFIX | 5.29 | EC | 1.32 | lb ai/a | 2.0 | pt/a | POST1 | B | | | | | | |
| 16 | N-PAK AMS | 100 | SL | | % v/v | 5 | % v/v | POST1 | B | | | | | | |
| 16 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST3 | D | | | | | | |
| 16 | N-PAK AMS | 100 | SL | | % v/v | 5 | % v/v | POST3 | D | | | | | | |
| 17 | \$46 TO \$48 PROGRAMS | | | | | | | | | 95 ab | 97 a | 97 ab | 98 a | 0.0 e | 0.7 c |
| 17 | AUTHORITY FIRST | 70 | WG | 0.282 | lb ai/a | 6.4 | oz/a | PRE | A | | | | | | |
| 17 | PROWL H2O | 3.8 | CS | 0.95 | lb ai/a | 2.0 | pt/a | PRE | A | | | | | | |
| 17 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | |
| 17 | N-PAK AMS | 100 | SL | | % v/v | 5 | % v/v | POST2 | C | | | | | | |
| 18 | \$46 TO \$48 PROGRAMS | | | | | | | | | 96 ab | 95 a | 95 ab | 97 a | 0.2 de | 0.0 c |
| 18 | AUTHORITY FIRST | 70 | WG | 0.28 | lb ai/a | 6.4 | oz/a | PRE | A | | | | | | |
| 18 | BOUNDARY | 6.5 | EC | 1.22 | lb ai/a | 1.5 | pt/a | PRE | A | | | | | | |
| 18 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | |
| 18 | N-PAK AMS | 100 | SL | | % v/v | 5 | % v/v | POST2 | C | | | | | | |
| 19 | \$46 TO \$48 PROGRAMS | | | | | | | | | 93 ab | 98 a | 97 ab | 98 a | 0.0 e | 0.5 c |
| 19 | AUTHORITY FIRST | 70 | WG | 0.282 | lb ai/a | 6.4 | oz/a | PRE | A | | | | | | |
| 19 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST2 | C | | | | | | |
| 19 | COBRA | 2 | EC | 0.125 | lb ai/a | 8 | fl oz/a | POST2 | C | | | | | | |
| 19 | SUPERB HC | 100 | SL | | % v/v | 0.5 | % v/v | POST2 | C | | | | | | |
| 19 | N-PAK AMS | 100 | SL | | % v/v | 5 | % v/v | POST2 | C | | | | | | |
| 20 | \$46 TO \$48 PROGRAMS | | | | | | | | | 96 a | 99 a | 98 a | 99 a | 0.2 de | 0.5 c |
| 20 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST1 | B | | | | | | |
| 20 | PREFIX | 5.29 | EC | 1.32 | lb ai/a | 2.0 | pt/a | POST1 | B | | | | | | |
| 20 | N-PAK AMS | 100 | SL | | % v/v | 5 | % v/v | POST1 | B | | | | | | |
| 20 | ROUNDUP POWERMAX | 4.5 | SL | 0.77 | lb ae/a | 22 | fl oz/a | POST3 | D | | | | | | |
| 20 | COBRA | 2 | EC | 0.125 | lb ai/a | 8 | fl oz/a | POST3 | D | | | | | | |
| 20 | SUPERB HC | 100 | SL | | % v/v | 0.5 | % v/v | POST3 | D | | | | | | |
| 20 | N-PAK AMS | 100 | SL | | % v/v | 5 | % v/v | POST3 | D | | | | | | |
| 21 | NONTREATED | | | | | | | | | 0 g | 0 e | 0 g | 0 c | 20.8 a | 2.5 b |
| 22 | WEED FREE | | | | | | | | | 99 a | 99 a | 99 a | 99 a | 0.0 e | 0.0 c |
| 22 | AUTHORITY FIRST | 70 | WG | 0.28 | lb ai/a | 6.4 | oz/a | PRE | A | | | | | | |
| 22 | DUAL MAGNUM | 7.62 | EC | 1.27 | lb ai/a | 1.33 | pt/a | PRE | A | | | | | | |
| 22 | HANDWEED AS NEEDED | | | | | | | | | | | | | | |
| LSD (P=.05) | | | | | | | | | | 17.7 | 10.0 | 14.9 | 17.8 | 4.39 | 1.64 |
| Replicate F | | | | | | | | | | 0.858 | 4.847 | 3.499 | 0.507 | 2.108 | 2.935 |
| Replicate Prob(F) | | | | | | | | | | 0.4319 | 0.0130 | 0.0398 | 0.6063 | 0.1348 | 0.0646 |
| Treatment F | | | | | | | | | | 13.886 | 39.638 | 19.386 | 19.842 | 9.374 | 3.187 |
| Treatment Prob(F) | | | | | | | | | | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0008 |

