

University of Minnesota 2015 Statewide Soybean Weed Management at Rochester, MN

Breitenbach, Fritz R., Lisa M. Behnken, Jeffrey L. Gunsolus and Thomas R. Hoversted

The objective of this trial was to evaluate Soybean Weed Management programs for weed control and crop response in soybeans in southeastern Minnesota. The research site was a Lawler loam series with pH of 6.1, O.M. 2.3% and soil test P and K levels of 33 ppm and 212 ppm, respectively. The field was fall chisel plowed and spring disked and field cultivated once prior to planting. The previous crop was corn. The soybean variety was ASGROW AG2035 and was planted on May 13, 2015 at a depth of 1.5 inches in 30 inch rows at a rate of 150,000 seeds per acre. A randomized complete block design was used with four replications. Preemergence (PRE) treatments were applied with a tractor-mounted sprayer delivering 15 gpa at 40 psi with a ground speed of 4 mph using TTI 110015. Post-emergent treatments were applied with two different nozzle types. Both were applied at 30 psi and ground speed of 4.5 MPH. When contact materials were applied as part of the treatment AITTJ60-11002 nozzles were used. Systemic materials were applied with TTI11002 nozzles. Evaluations of the plots were taken June 5, June 10, June 19, June 26, July 8, and September 24. The center two rows of each plot were machine harvested on October 1. Application dates, environmental conditions, and weed stages can be found in Table 1. Performance rating for giant ragweed control, common lambsquarters control, common waterhemp control, grass control, and crop injury can be found in Tables 2 through 6, respectively. (University of Minnesota Extension Regional Office, Rochester.)

Table 1. Application timing, plant stages, environmental conditions.

| Date | 5/13 | 6/5 | 6/8 | 6/10 | 6/16 | 6/25 | 7/2 |
|---|----------|-------------|--------------|---------------|--------------|-------------|-----------|
| Treatment | PRE A | POST I B | POST II C | POST III D | POST IV E | POST V F | POST VI'G |
| Temperature (F) | | | | | | | |
| Air | 64 | 68 | 76 | 77 | 63 | 79 | 72 |
| Soil | 55.9 | 65.5 | 77.4 | 86.2 | 67.8 | 79.7 | 70 |
| Relative Humidity (%) | 64 | 78 | 51 | 48 | 68 | 56 | 64 |
| Wind (mph) | 15 | 12 | 12 | 12 | 7 | 8 | 6 |
| Soil Moisture | Adequate | Adequate | Adequate | Adequate | Adequate | Adequate | Adequate |
| Soybean | | | | | | | |
| Stage | | DESC | DESC | DESC | DESC | DESC | DESC |
| Height (in) | 0 | 3 | 4.5 | 4.5 | 5.5 | 10.0 | 12 |
| Giant Ragweed | | | | | | | |
| Weed Density (ft ²) | | | | | 7.8 | | |
| Height (in) | | 2.3 | 2.5 | 3.8 | 4.3 | 6.4 | 4.3 |
| Common Lambsquarter | | | | | | | |
| Weed Density (ft ²) | | | | | 5.5 | | |
| Height (in) | | 0.8 | | 1.0 | 1.9 | 1.8 | 2.5 |
| Common Waterhemp | | | | | | | |
| Weed Density (ft ²) | | | | | 8.8 | | |
| Height (in) | | 0.6 | | 1.0 | 1.6 | 2.18 | 0.68 |
| Grass | | | | | | | |
| Weed Density (ft ²) | | | | | 3.8 | | |
| Height (in) | 0 | 0 | 1.0 | 1.0 | 1.9 | 2.0 | 2.5 |
| Rainfall after each application (in) | | | | | | | |
| Week 1 | 0.56 | 2.82 | 1.64 | 1.69 | 0.78 | 1.63 | 0.69 |
| Week 2 | 1.47 | 0.28 | 0.05 | 0.78 | 1.63 | 0.69 | 0.30 |
| Week 3 | 1.32 | 0.78 | 1.95 | 1.63 | 1.15 | 0.30 | 1.64 |

Table 2. (continued) Giant ragweed control with soybean herbicide systems at Rochester, MN in 2015.

| Weed Code | | | | | Giant ragweed | | | | | | | YIELD | |
|---|--|----------------------------------|--|--|----------------------------|---------------------|-------------|-------------|------------|-------------|-------------|-------|------|
| Rating Date | | | | | Jun-5-2015 | Jun-10-2015 | Jun-19-2015 | Jun-26-2015 | Jul-8-2015 | Sep-24-2015 | Oct-14-2015 | | |
| No. | Name | Rate | Unit | Stg | Code | Percent control (%) | | | | | | | Bu/A |
| 15 | SOA 2, 14 / 9, 15 Enlite 2.8 oz/A - chlorimuron - thifensulfuron - flumioxazin Abundit Extra Cinch N-Pa-K AMS | 0.33 0.5 2 32 1 3 | oz/a oz/a oz/a oz/a pt/a qt/a | Pre Pre Pre 4" Weeds 4" Weeds 4" Weeds | A A A E E E | 79 bc | 72 d | 91 de | 98 bcd | 98 abc | 97 bcd | 39.6 | ef |
| 16 | SOA 14 / 9, 14, 15 Rowel Roundup WeatherMax Warrant Cobra COC N-Pa-K AMS | 3 32 2 12.5 1 3 | oz/a oz/a pt/a oz/a pt/a qt/a | Pre 4" Weeds 4" Weeds 4" Weeds 4" Weeds 4" Weeds | A E E E E E | 73 cde | 72 d | 99 a | 98 abc | 98 abc | 98 abc | 36.5 | f |
| 23 | SOA 14 / 9 SPARTAN Roundup Power Max N-Pa-K AMS | 9 32 3 | fl oz/a oz/a qt/a | PRE Late Post Late Post | A E E | 40 g | 21 h | 71 j | 97 cde | 95 fgh | 96 cde | 44.7 | ab |
| 24 | SOA 14, 7 / 9 SPARTAN Lorox FL Roundup Power Max N-Pa-K AMS | 9 32 32 3 | fl oz/a fl oz/a oz/a qt/a | PRE PRE Late Post Late Post | A A E E | 59 f | 41 f | 78 i | 98 b-e | 96 d-g | 96 b-e | 46.3 | a |
| 25 | SOA 14, 5 / 9 SPARTAN TRICOR Roundup Power Max N-Pa-K AMS | 9 14 32 3 | fl oz/a oz/a oz/a qt/a | PRE PRE Late Post Late Post | A A E E | 66 ef | 56 e | 85 gh | 98 bcd | 97 b-e | 97 bcd | 43.6 | abc |
| PRE / POST V 5-13 / 6-25 | | | | | | | | | | | | | |
| 1 | SOA 2, 14 / 9 Authority First Roundup Power Max N-Pa-K AMS | 6.4 32 3 | oz/a oz/a qt/a | Pre 4" Weeds 4" Weeds | A F F | 85 b | 88 b | 83 h | 85 h | 99 ab | 99 abc | 43.2 | a-d |
| POST I / POST VI 5-13 / 7-2 | | | | | | | | | | | | | |
| 20 | SOA 9, 14 / 9 Roundup Power Max Cobra COC N-Pa-K AMS Roundup Power Max N-Pa-K AMS | 32 12.5 1 3 32 3 | oz/a oz/a pt/a qt/a oz/a qt/a | 2" Weeds 2" Weeds 2" Weeds 2" Weeds 2" regrowth 2" regrowth | B B B B G G | 0 i | 99 a | 97 abc | 90 g | 99 ab | 99 ab | 37.1 | f |
| POST II 6/8 | | | | | | | | | | | | | |
| 27 | SOA 9 Roundup Power Max N-Pa-K AMS | 32 3 | oz/a qt/a | 4" Weeds 4" Weeds | C C | 0 i | 28 g | 96 abc | 90 g | 88 j | 83 g | 36.7 | f |
| POST III 6/16 | | | | | | | | | | | | | |
| 28 | SOA 9 Roundup Power Max N-Pa-K AMS | 32 3 | oz/a qt/a | 6" Weeds 6" Weeds | E E | 0 i | 0 i | 70 j | 97 b-e | 96 c-f | 94 e | 43.8 | abc |
| 22 | Weed-Free | | | multiple | | 100 a | 100 a | 99 a | 100 a | 100 a | 100 a | 42.6 | b-e |
| LSD P=.10 for weed control ratings, LSD P=.20 for Yields | | | | | | 7.5 | 4.9 | 3.7 | 1.8 | 2.3 | 2.6 | 3.4 | |

Table 3. (continued) Common lambsquarters control with soybean herbicide systems at Rochester, MN in 2015.

| Weed Code | | | | | Common lambsquarters | | | | | | YIELD | | | | | | | | |
|---|--|----------------------------------|--|--|----------------------------|---------------------|-------------|-------------|------------|-------------|-------------|------|----|-----|----|-----|-----|------|-----|
| Rating Date | | | | | Jun-5-2015 | Jun-10-2015 | Jun-19-2015 | Jun-26-2015 | Jul-8-2015 | Sep-24-2015 | Oct-14-2015 | | | | | | | | |
| No. | Name | Rate | Unit | Stg | Code | Percent control (%) | | | | | | Bu/A | | | | | | | |
| 15 | SOA 2, 14 / 9, 15 Enlite 2.8 oz/A - chlorimuron - thifensulfuron - flumioxazin Abundit Extra Cinch N-Pa-K AMS | 0.33 0.5 2 32 1 3 | oz/a oz/a oz/a oz/a pt/a qt/a | Pre Pre Pre 4" Weeds 4" Weeds 4" Weeds | A A A E E E | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | ab | 99 | ab | 39.6 | ef |
| 16 | SOA 14 / 9, 14, 15 Rowel Roundup WeatherMax Warrant Cobra COC N-Pa-K AMS | 3 32 2 12.5 1 3 | oz/a oz/a pt/a oz/a pt/a qt/a | Pre 4" Weeds 4" Weeds 4" Weeds 4" Weeds 4" Weeds | A E E E E E | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | a | 99 | ab | 36.5 | f |
| 23 | SOA 14 / 9 SPARTAN Roundup Power Max N-Pa-K AMS | 9 32 3 | fl oz/a oz/a qt/a | PRE Late Post Late Post | A E E | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | a | 99 | abc | 44.7 | ab |
| 24 | SOA 14, 7 / 9 SPARTAN Lorox FL Roundup Power Max N-Pa-K AMS | 9 32 32 3 | fl oz/a fl oz/a oz/a qt/a | PRE PRE Late Post Late Post | A A E E | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | a | 99 | ab | 46.3 | a |
| 25 | SOA 14, 5 / 9 SPARTAN TRICOR Roundup Power Max N-Pa-K AMS | 9 14 32 3 | fl oz/a oz/a oz/a qt/a | PRE PRE Late Post Late Post | A A E E | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | a | 99 | ab | 43.6 | abc |
| PRE / POST V 5-13 / 6/25 | | | | | | | | | | | | | | | | | | | |
| 1 | SOA 2, 14 / 9 Authority First Roundup Power Max N-Pa-K AMS | 6.4 32 3 | oz/a oz/a qt/a | Pre 4" Weeds 4" Weeds | A F F | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | a | 99 | ab | 43.2 | a-d |
| POST I / POST VI 5-13 / 7-2 | | | | | | | | | | | | | | | | | | | |
| 20 | SOA 9, 14 / 9 Roundup Power Max Cobra COC N-Pa-K AMS Roundup Power Max N-Pa-K AMS | 32 12.5 1 3 32 3 | oz/a oz/a pt/a qt/a oz/a qt/a | 2" Weeds 2" Weeds 2" Weeds 2" Weeds Late Post Late Post | B B B B G G | 0 | c | 99 | b | 99 | a | 95 | c | 99 | ab | 98 | abc | 37.1 | f |
| POST II 6-8 | | | | | | | | | | | | | | | | | | | |
| 27 | SOA 9 Roundup Power Max N-Pa-K AMS | 32 3 | oz/a qt/a | 4" Weeds 4" Weeds | C C | 0 | c | 28 | c | 99 | a | 93 | d | 88 | d | 86 | f | 36.7 | f |
| POST IIV 6-16 | | | | | | | | | | | | | | | | | | | |
| 28 | SOA 9 Roundup Power Max N-Pa-K AMS | 32 3 | oz/a qt/a | 6" Weeds 6" Weeds | E E | 0 | c | 0 | d | 88 | b | 98 | b | 95 | c | 93 | e | 43.8 | abc |
| 22 | Weed-Free | | multiple | | | 100 | a | 100 | a | 99 | a | 100 | a | 100 | a | 100 | a | 42.6 | b-e |
| LSD P=.10 for weed control ratings, LSD P=.20 for Yields | | | | | | | | 1 | | 1 | | 1 | | 2 | | 2 | | 3.4 | |

Table 4. (continued) Common waterhemp control with soybean herbicide systems at Rochester, MN in 2015.

| Weed Code | | | | | Common waterhemp | | | | | | YIELD | | | | | | | | |
|--|--|----------------------------------|--|--|----------------------------|---------------------|-------------|-------------|------------|-------------|-------------|------|----|-----|---|-----|----|------|-----|
| Rating Date | | | | | Jun-5-2015 | Jun-10-2015 | Jun-19-2015 | Jun-26-2015 | Jul-8-2015 | Sep-24-2015 | Oct-14-2015 | | | | | | | | |
| No. | Name | Rate | Unit | Stg | Code | Percent control (%) | | | | | | Bu/A | | | | | | | |
| 15 | SOA 2, 14 / 9, 15 Enlite 2.8 oz/A - chlorimuron - thifensulfuron - flumioxazin Abundit Extra Cinch N-Pa-K AMS | 0.33 0.5 2 32 1 3 | oz/a oz/a oz/a oz/a pt/a qt/a | Pre Pre Pre 4" Weeds 4" Weeds 4" Weeds | A A A E E E | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | a | 99 | ab | 39.6 | ef |
| 16 | SOA 14 / 9, 14, 15 Rowel Roundup WeatherMax Warrant Cobra COC N-Pa-K AMS | 3 32 2 12.5 1 3 | oz/a oz/a pt/a oz/a pt/a qt/a | Pre 4" Weeds 4" Weeds 4" Weeds 4" Weeds 4" Weeds | A E E E E E | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | a | 99 | ab | 36.5 | f |
| 23 | SOA 14 / 9 SPARTAN Roundup Power Max N-Pa-K AMS | 9 32 3 | fl oz/a oz/a qt/a | PRE Late Post Late Post | A E E | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | a | 99 | ab | 44.7 | ab |
| 24 | SOA 14, 7 / 9 SPARTAN Lorox FL Roundup Power Max N-Pa-K AMS | 9 32 32 3 | fl oz/a fl oz/a oz/a qt/a | PRE PRE Late Post Late Post | A A E E | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | a | 99 | b | 46.3 | a |
| 25 | SOA 14, 5 / 9 SPARTAN TRICOR Roundup Power Max N-Pa-K AMS | 9 14 32 3 | fl oz/a oz/a oz/a qt/a | PRE PRE Late Post Late Post | A A E E | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | a | 99 | ab | 43.6 | abc |
| PRE / POST V 5-13 / 6-25 | | | | | | | | | | | | | | | | | | | |
| 1 | SOA 2, 14 / 9 Authority First Roundup Power Max N-Pa-K AMS | 6.4 32 3 | oz/a oz/a qt/a | Pre 4" Weeds 4" Weeds | A F F | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | a | 99 | ab | 43.2 | a-d |
| POST I / POST VI 6-5 / 7-2 | | | | | | | | | | | | | | | | | | | |
| 20 | SOA 9, 14 / 9 Roundup Power Max Cobra COC N-Pa-K AMS Roundup Power Max N-Pa-K AMS | 32 12.5 1 3 32 3 | oz/a oz/a pt/a qt/a oz/a qt/a | 2" Weeds 2" Weeds 2" Weeds 2" Weeds Late Post Late Post | B B B B G G | 0 | c | 99 | b | 99 | a | 98 | b | 99 | a | 98 | bc | 37.1 | f |
| POST II 6-8 | | | | | | | | | | | | | | | | | | | |
| 27 | SOA 9 Roundup Power Max N-Pa-K AMS | 32 3 | oz/a qt/a | 4" Weeds 4" Weeds | C C | 0 | c | 28 | c | 99 | a | 91 | d | 87 | d | 83 | f | 36.7 | f |
| POST IV 6-16 | | | | | | | | | | | | | | | | | | | |
| 28 | SOA 9 Roundup Power Max N-Pa-K AMS | 32 3 | oz/a qt/a | 6" Weeds 6" Weeds | E E | 0 | c | 0 | d | 89 | b | 96 | c | 93 | c | 89 | e | 43.8 | abc |
| 22 | Weed-Free | | Multiple | | | 100 | a | 100 | a | 99 | a | 100 | a | 100 | a | 100 | a | 42.6 | b-e |
| LSD P=.10 for weed rations, LSD P= .20 for yields | | | | | | | | 1 | | 2 | | 2 | | 2 | | 1 | | 3.4 | |

Table 5. (continued) Grass control with soybean herbicide systems at Rochester, MN in 2015.

| Weed Code | | | | | Grass | | | | | | YIELD | | | | | | | | |
|--|--|----------------------------------|--|--|----------------------------|---------------------|-------------|-------------|------------|-------------|-------------|------|----|-----|----|-----|----|------|-----|
| Rating Date | | | | | Jun-5-2015 | Jun-10-2015 | Jun-19-2015 | Jun-26-2015 | Jul-8-2015 | Sep-24-2015 | Oct-14-2015 | | | | | | | | |
| No. | Name | Rate | Unit | Stg | Code | Percent control (%) | | | | | | Bu/A | | | | | | | |
| 15 | SOA 2, 14 / 9, 15 Enlite 2.8 oz/A - chlorimuron - thifensulfuron - flumioxazin Abundit Extra Cinch N-Pa-K AMS | 0.33 0.5 2 32 1 3 | oz/a oz/a oz/a oz/a pt/a qt/a | Pre Pre Pre 4" Weeds 4" Weeds 4" Weeds | A A A E E E | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | ab | 99 | ab | 39.6 | ef |
| 16 | SOA 14 / 9, 14, 15 Rowel Roundup WeatherMax Warrant Cobra COC N-Pa-K AMS | 3 32 2 12.5 1 3 | oz/a oz/a pt/a oz/a pt/a qt/a | Pre 4" Weeds 4" Weeds 4" Weeds 4" Weeds 4" Weeds | A E E E E E | 99 | b | 99 | b | 99 | a | 99 | ab | 99 | ab | 99 | ab | 36.5 | f |
| 23 | SOA 14 / 9 SPARTAN Roundup Power Max N-Pa-K AMS | 9 32 3 | fl oz/a oz/a qt/a | PRE Late Post Late Post | A E E | 99 | b | 99 | b | 99 | a | 99 | ab | 97 | ab | 98 | ab | 44.7 | ab |
| 24 | SOA 14, 7 / 9 SPARTAN Lorox FL Roundup Power Max N-Pa-K AMS | 9 32 32 3 | fl oz/a fl oz/a oz/a qt/a | PRE PRE Late Post Late Post | A A E E | 99 | b | 99 | b | 99 | a | 99 | ab | 98 | ab | 98 | ab | 46.3 | a |
| 25 | SOA 14, 5 / 9 SPARTAN TRICOR Roundup Power Max N-Pa-K AMS | 9 14 32 3 | fl oz/a oz/a oz/a qt/a | PRE PRE Late Post Late Post | A A E E | 99 | b | 99 | b | 99 | a | 99 | ab | 98 | ab | 97 | ab | 43.6 | abc |
| PRE / POST V 5-13 / 6-25 | | | | | | | | | | | | | | | | | | | |
| 1 | SOA 2, 14 / 9 Authority First Roundup Power Max N-Pa-K AMS | 6.4 32 3 | oz/a oz/a qt/a | Pre 4" Weeds 4" Weeds | A F F | 99 | b | 99 | b | 97 | b | 92 | c | 99 | ab | 99 | ab | 43.2 | a-d |
| PRE / POST VI 5-13 / 7-2 | | | | | | | | | | | | | | | | | | | |
| 20 | SOA 9, 14 / 9 Roundup Power Max Cobra COC N-Pa-K AMS Roundup Power Max N-Pa-K AMS | 32 12.5 1 3 32 3 | oz/a oz/a pt/a qt/a oz/a qt/a | 2" Weeds 2" Weeds 2" Weeds 2" Weeds Late Post Late Post | B B B B G G | 0 | c | 99 | b | 99 | a | 97 | ab | 99 | ab | 99 | ab | 37.1 | f |
| POST II 6-8 | | | | | | | | | | | | | | | | | | | |
| 27 | SOA 9 Roundup Power Max N-Pa-K AMS | 32 3 | oz/a qt/a | 4" Weeds 4" Weeds | C C | 0 | c | 28 | c | 98 | b | 87 | d | 79 | d | 82 | d | 36.7 | f |
| POST IV 6-16 | | | | | | | | | | | | | | | | | | | |
| 28 | SOA 9 Roundup Power Max N-Pa-K AMS | 32 3 | oz/a qt/a | 6" Weeds 6" Weeds | E E | 0 | c | 0 | d | 90 | c | 97 | b | 93 | c | 90 | c | 43.8 | abc |
| 22 | Weed-Free | | Multiple | | | 100 | a | 100 | a | 99 | a | 100 | a | 100 | a | 100 | a | 42.6 | b-e |
| LSD P=.10 for weed rations, LSD P= .20 for yields | | | | | | . | | 1 | | 1 | | 3 | | 4 | | 4 | | 3.4 | |

Table 6. (continued) Crop response to herbicide systems at Rochester, MN in 2015.

| Weed Code | | | | | Crop Response | | | | | | | YIELD | | | | | |
|--|--|----------------------------------|--|--|----------------------------|--------------------|-------------|-------------|------------|-------------|-----|-------|---|-----|---|------|-----|
| Rating Date | | | | | Jun-5-2015 | Jun-10-2015 | Jun-19-2015 | Jun-26-2015 | Jul-8-2015 | Oct-14-2015 | | | | | | | |
| No. | Name | Rate | Unit | Stg | Code | Percent Injury (%) | | | | | | Bu/A | | | | | |
| 15 | SOA 2, 14 / 9, 15 Enlite 2.8 oz/A - chlorimuron - thifensulfuron - flumioxazin Abundit Extra Cinch N-Pa-K AMS | 0.33 0.5 2 32 1 3 | oz/a oz/a oz/a oz/a pt/a qt/a | Pre Pre Pre 4" Weeds 4" Weeds 4" Weeds | A A A E E E | 25 | ab | 24 | h | 38 | d | 11 | c | 0 | d | 39.6 | ef |
| 16 | SOA 14 / 9, 14, 15 Rowel Roundup WeatherMax Warrant Cobra COC N-Pa-K AMS | 3 32 2 12.5 1 3 | oz/a oz/a pt/a oz/a pt/a qt/a | Pre 4" Weeds 4" Weeds 4" Weeds 4" Weeds 4" Weeds | A E E E E E | 26 | a | 35 | e | 89 | a | 46 | a | 18 | a | 36.5 | f |
| 23 | SOA 14 / 9 SPARTAN Roundup Power Max N-Pa-K AMS | 9 32 3 | fl oz/a oz/a qt/a | PRE Late Post Late Post | A E E | 0 | d | 0 | i | 19 | e-h | 0 | f | 0 | d | 44.7 | ab |
| 24 | SOA 14, 7 / 9 SPARTAN Lorox FL Roundup Power Max N-Pa-K AMS | 9 32 32 3 | fl oz/a fl oz/a oz/a qt/a | PRE PRE Late Post Late Post | A A E E | 0 | d | 0 | i | 14 | h-k | 0 | f | 0 | d | 46.3 | a |
| 25 | SOA 14, 5 / 9 SPARTAN TRICOR Roundup Power Max N-Pa-K AMS | 9 14 32 3 | fl oz/a oz/a oz/a qt/a | PRE PRE Late Post Late Post | A A E E | 0 | d | 0 | i | 13 | i-l | 0 | f | 0 | d | 43.6 | abc |
| PRE / POST V 5-13 / 6-25 | | | | | | | | | | | | | | | | | |
| 1 | SOA 2, 14 / 9 Authority First Roundup Power Max N-Pa-K AMS | 6.4 32 3 | oz/a oz/a qt/a | Pre 4" Weeds 4" Weeds | A F F | 0 | d | 0 | i | 0 | m | 0 | f | 0 | d | 43.2 | a-d |
| POST I / POST VI 5-13 / 7-2 | | | | | | | | | | | | | | | | | |
| 20 | SOA 9, 14 / 9 Roundup Power Max Cobra COC N-Pa-K AMS Roundup Power Max N-Pa-K AMS | 32 12.5 1 3 32 3 | oz/a oz/a pt/a qt/a oz/a qt/a | 2" Weeds 2" Weeds 2" Weeds 2" Weeds Late Post Late Post | B B B B G G | 0 | d | 85 | b | 46 | c | 5 | d | 3 | c | 37.1 | f |
| POST II 6-8 | | | | | | | | | | | | | | | | | |
| 27 | SOA 9 Roundup Power Max N-Pa-K AMS | 32 3 | oz/a qt/a | 4" Weeds 4" Weeds | C C | 0 | d | 0 | i | 24 | e | 0 | f | 0 | d | 36.7 | f |
| POST IV 6-16 | | | | | | | | | | | | | | | | | |
| 28 | SOA 9 Roundup Power Max N-Pa-K AMS | 32 3 | oz/a qt/a | 6" Weeds 6" Weeds | E E | 0 | d | 0 | i | 9 | kl | 0 | f | 0 | d | 43.8 | abc |
| 22 | Weed-Free | | | Multiple | | 0 | d | 100 | a | 8 | l | 0 | f | 0 | d | 42.6 | b-e |
| LSD P=.10 for weed rations, LSD P= .20 for yields | | | | | | 2.4 | | 3.0 | | 5.3 | | 2.8 | | 2.3 | | 3.4 | |