

2012- 2014 Time of Weed Removal in Corn: A Field Teaching Tool – Seeing is Believing

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Proper time of weed removal in corn is a critical component of successful weed control programs that maximize crop yields. Over-reliance on postemergence glyphosate in row crops has reduced herbicide diversification and the use of preemergence herbicides. Over-simplified weed management programs result in early season weed competition, decreased time to effectively control weed populations, increased weed densities to be controlled by postemergence herbicides, increased risk of developing resistant weed populations, and ultimately reduced crop yield potential. Field demonstrations and hands-on schools can be effective ways of teaching agricultural professionals and farmers the importance of these concepts, **Seeing is Believing**. The goal is to help growers focus on herbicide systems, develop long range plans and **Take Control** of weed management on their farm.

Field demonstrations with different times of weed removal and systems of preemergence followed by postemergence herbicides were established in 2012 - 2014 at Rochester, Minnesota. In 2012 and 2013, weeds were removed with herbicides at the crop stages of 1) at planting, 2) V2-V3, 3) V4-V5 and 4) V6-V7. In addition, herbicide systems comparing broad and limited spectrum preemergence control (based on weed species present) followed by both timely and un-timely postemergence herbicides were established. In 2014, weed removal was based on weed heights, 1) preemergence, 2) 1-2 inch weeds, 3) 2-4 inch weeds and 4) 4-6 inch weeds, with giant ragweed being the indicator weed. Field tours showed participants the value of robust early-season weed control and how this increased the time or window of opportunity for applications of effective postemergence herbicides. The opposite demonstrated how limited early-season weed control greatly reduces the time period for applications of effective postemergence herbicides. In 2014, weed removal based on size demonstrated how quickly weeds grow and how competitive they can become when not removed.

The research site in 2014 was a Lawler loam series with a pH of 6.9, O.M. of 2.2%, and soil test P and K levels of 49 ppm and 124 ppm, respectively. Spring fertilizer was broadcast ahead of planting on April 28, 2014 at a rate of 119-18-149-24(N-P-K-S). The field was spring disked and field cultivated once prior to planting. The corn hybrid, Dekalb DKC 53-56 RIB, was planted

on May 6, 2014 at a depth of 1.5 inches in 30 inch rows at a rate of 32,000 seeds per acre. A randomized complete block design was used with four replications. Preemergence (PRE) treatments were applied with a tractor-mounted sprayer at 5 mph delivering 15 GPA at 40 psi using TTI 11002 nozzles. Postemergence (POST) treatments were applied at 4 mph and 40 psi using TTI 110015 nozzles. Evaluations were taken on May 30, June 9, and July 16. SPAD meter readings were taken on June 25 and plant heights on June 18 and July 1. The center two rows of each plot were machine harvested on October 29, 2014. Application dates, environmental conditions, and weed stages are listed in Table 1. Herbicide performance, height, SPAD readings and yield are reported in Tables 2-8. (University of Minnesota Extension Regional Office – Rochester).

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

| Date | 5/6 | 5/27 | 6/6 | 6/11 |
|---|--------|--------|---------|----------|
| Treatment | PRE | POST I | POST II | POST III |
| Temperature (F) | | | | |
| Air | 63 | 74 | 80 | 73 |
| Soil | 58.1 | 75.9 | 83.1 | 76.1 |
| Relative Humidity (%) | 28 | 66 | 43 | 33 |
| Wind (mph) | 22 | 3 | 5 | 6 |
| Soil Moisture | Normal | Normal | Normal | Dry |
| Corn | | | | |
| Stage | | V2-V3 | V4-V5 | V6 |
| Height (inch) | | 3.8 | 12 | 13.5 |
| Giant Ragweed | | | | |
| Weed density (ft ²) | | 0.38 | | |
| Height (inch) | | 1.9 | 5.0 | 6.0 |
| Common Lambsquarters | | | | |
| Weed density (ft ²) | | 21 | | |
| Height (inch) | | 0.88 | 3.75 | 3.38 |
| Common Waterhemp | | | | |
| Weed density (ft ²) | | 3.75 | | |
| Height (inch) | | 0.25 | 2.8 | 3.13 |
| Rainfall after each application (inch) | | | | |
| Week 1 | 1.62 | 1.06 | 0.06 | 4.61 |
| Week 2 | 0.47 | 0.04 | 5.92 | 1.73 |
| Week 3 | 0.04 | 3.86 | 0.58 | 1.27 |

Table 2. Comparison of time of giant ragweed removal in preemergence and postemergence systems in field corn on May 30, June 9 and July 16 and crop yield at Rochester, MN, in 2014.

| Treatment | Rate (rate/A) | Giant Ragweed Control | | | YIELD Bu/A |
|---|--|-----------------------|----------|----------|-----------------------|
| | | 5/30 | 6/9 | 7/16 | |
| | | (% Control) | | | |
| Untreated Check | | 0 | 0 | 0 | 46 e |
| PRE | | | | | |
| Surestart + Sharpen | 1.75 pt/a + 1 fl oz/a | 97 | 97 | 92 | 174 bcd |
| Verdict | 14 fl oz/a | 98 | 98 | 95 | 181 a-d |
| Lumax EZ | 3 qt/a | 98 | 98 | 98 | 197 ab |
| PRE / POST III (4-6" GIRW) | | | | | |
| Surestart + Sharpen / Laudis + Upland MSO + AMS | 1.75 pt/a + 1 fl oz/a / 3 fl oz/a + 1% v/v + 17 lb/100 gal | 96 | 95 | 99 | 182 a-d |
| Surestart + Sharpen / Status + COC + AMS | 1.75 pt/a + 1 fl oz/a / 7.5 oz wt/a + 1% v/v + 17 lb/100 gal | 97 | 98 | 99 | 163 d |
| Verdict / Laudis + Upland MSO + AMS | 14 fl oz/a / 3 fl oz/a + 1% v/v + 17 lb/100 gal | 97 | 98 | 99 | 194 abc |
| Verdict / Status + COC + AMS | 14 fl oz/a / 7.5 oz wt/a + 1% v/v + 17 lb/100 gal | 97 | 98 | 99 | 204 a |
| Lumax EZ / Lumax EZ + COC | 1.5 qt/a / 1.5 qt/a + 1% v/v | 92 | 95 | 97 | 199 a |
| Lumax EZ / Lumax EZ + Status + NIS + AMS | 1.5 qt/a / 1.5 qt/a + 5 oz wt/a + 0.25% v/v + 17 lb/100 gal | 94 | 93 | 99 | 194 abc |
| POST I (1-2" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 91 | 99 | 98 | 207 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 90 | 99 | 93 | 162 d |
| POST II (2-4" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 0 | 10 | 99 | 202 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 0 | 10 | 99 | 171 cd |
| POST III (4-6" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 0 | 0 | 99 | 162 d |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 0 | 0 | 99 | 170 cd |
| LSD (P=0.10) | | 4 | 3 | 3 | 25 (P=.20) |

Table 3. Comparison of time of common lambsquarters removal in preemergence and postemergence systems in field corn on May 30, June 9 and July 16 and crop yield at Rochester, MN, in 2014.

| Treatment | Rate (rate/A) | Common Lambsquarters Control | | | YIELD BU/A |
|---|---|------------------------------|----------|----------|-----------------------------|
| | | 5/30 | 6/9 | 7/16 | |
| | | (% Control) | | | |
| Untreated Check | | 0 | 0 | 0 | 46 e |
| PRE | | | | | |
| Surestart + Sharpen | 1.75 pt/a + 1 fl oz/a | 99 | 99 | 99 | 174 bcd |
| Verdict | 14 fl oz/a | 99 | 98 | 97 | 181 a-d |
| Lumax EZ | 3 qt/a | 99 | 99 | 99 | 197 ab |
| PRE / POST III (4-6" GIRW) | | | | | |
| Surestart + Sharpen / Laudis + Upland MSO + AMS | 1.75 pt/a + 1 fl oz/a / 3 fl oz/a + 1% v/v +17 lb/100 gal | 97 | 96 | 99 | 182 a-d |
| Surestart + Sharpen / Status + COC + AMS | 1.75 pt/a + 1 fl oz/a / 7.5 oz wt/a + 1% v/v +17 lb/100 gal | 99 | 99 | 99 | 163 d |
| Verdict / Laudis + Upland MSO + AMS | 14 fl oz/a / 3 fl oz/a + 1% v/v + 17 lb/100 gal | 98 | 98 | 99 | 194 abc |
| Verdict / Status + COC + AMS | 14 fl oz/a / 7.5 oz wt/a + 1% v/v + 17 lb/100 gal | 99 | 98 | 99 | 204 a |
| Lumax EZ / Lumax EZ + COC | 1.5 qt/a / 1.5 qt/a + 1% v/v | 99 | 99 | 99 | 199 a |
| Lumax EZ / Lumax EZ + Status + NIS + AMS | 1.5 qt/a / 1.5 qt/a + 5 oz wt/a + 0.25% v/v + 17 lb/100 gal | 99 | 99 | 99 | 194 abc |
| POST I (1-2" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 98 | 99 | 98 | 207 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 86 | 91 | 75 | 162 d |
| POST II (2-4" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 0 | 10 | 99 | 202 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 0 | 10 | 86 | 171 cd |
| POST III (4-6" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 0 | 0 | 97 | 162 d |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 0 | 0 | 92 | 170 cd |
| LSD (P=0.10) | | 2 | 2 | 2 | 25 (P=.20) |

Table 4. Comparison of time of common waterhemp removal in preemergence and postemergence systems in field corn on May 30, June 9 and July 16 and crop yield at Rochester, MN, in 2014.

| Treatment | Rate (rate/A) | Common Waterhemp Control | | | |
|---|---|--------------------------|----------|----------|-----------------------|
| | | 5/30 | 6/9 | 7/16 | |
| | | (% Control) | | | |
| Untreated Check | | 0 | 0 | 0 | 46 e |
| PRE | | | | | |
| Surestart + Sharpen | 1.75 pt/a + 1 fl oz/a | 99 | 99 | 98 | 174 bcd |
| Verdict | 14 fl oz/a | 99 | 98 | 93 | 181 a-d |
| Lumax EZ | 3 qt/a | 99 | 99 | 99 | 197 ab |
| PRE / POST III (4-6" GIRW) | | | | | |
| Surestart + Sharpen / Laudis + Upland MSO + AMS | 1.75 pt/a + 1 fl oz/a / 3 fl oz/a + 1% v/v +17 lb/100 gal | 98 | 97 | 99 | 182 a-d |
| Surestart + Sharpen / Status + COC + AMS | 1.75 pt/a + 1 fl oz/a / 7.5 oz wt/a + 1% v/v +17 lb/100 gal | 99 | 99 | 99 | 163 d |
| Verdict / Laudis + Upland MSO + AMS | 14 fl oz/a / 3 fl oz/a + 1% v/v + 17 lb/100 gal | 98 | 95 | 97 | 194 abc |
| Verdict / Status + COC + AMS | 14 fl oz/a / 7.5 oz wt/a + 1% v/v + 17 lb/100 gal | 98 | 96 | 96 | 204 a |
| Lumax EZ / Lumax EZ + COC | 1.5 qt/a / 1.5 qt/a + 1% v/v | 99 | 99 | 98 | 199 a |
| Lumax EZ / Lumax EZ + Status + NIS + AMS | 1.5 qt/a / 1.5 qt/a + 5 oz wt/a + 0.25% v/v + 17 lb/100 gal | 99 | 99 | 99 | 194 abc |
| POST I (1-2" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 98 | 98 | 97 | 207 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 87 | 94 | 73 | 162 d |
| POST II (2-4" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 0 | 10 | 96 | 207 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 0 | 10 | 91 | 162 d |
| POST III (4-6" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 0 | 0 | 82 | 202 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 0 | 0 | 90 | 171 cd |
| LSD (P=0.10) | | 1 | 2 | 4 | 25 (P=.20) |

Table 5. Comparison of time of grass removal in preemergence and postemergence systems in field corn on May 30, June 9 and July 16 and crop yield at Rochester, MN, in 2014.

| Treatment | Rate (rate/A) | Grass Control | | | |
|---|---|---------------|----------|----------|-------------------|
| | | 5/30 | 6/9 | 7/16 | |
| | | (% Control) | | | |
| Untreated Check | | 0 | 0 | 0 | 46 e |
| PRE | | | | | |
| Surestart + Sharpen | 1.75 pt/a + 1 fl oz/a | 99 | 99 | 98 | 174 bcd |
| Verdict | 14 fl oz/a | 99 | 99 | 97 | 181 a-d |
| Lumax EZ | 3 qt/a | 99 | 99 | 99 | 197 ab |
| PRE / POST III (4-6" GIRW) | | | | | |
| Surestart + Sharpen / Laudis + Upland MSO + AMS | 1.75 pt/a + 1 fl oz/a / 3 fl oz/a + 1% v/v +17 lb/100 gal | 99 | 99 | 99 | 182 a-d |
| Surestart + Sharpen / Status + COC + AMS | 1.75 pt/a + 1 fl oz/a / 7.5 oz wt/a + 1% v/v +17 lb/100 gal | 99 | 99 | 99 | 163 d |
| Verdict / Laudis + Upland MSO + AMS | 14 fl oz/a / 3 fl oz/a + 1% v/v + 17 lb/100 gal | 99 | 99 | 99 | 194 abc |
| Verdict / Status + COC + AMS | 14 fl oz/a / 7.5 oz wt/a + 1% v/v + 17 lb/100 gal | 99 | 98 | 99 | 204 a |
| Lumax EZ / Lumax EZ + COC | 1.5 qt/a / 1.5 qt/a + 1% v/v | 99 | 98 | 99 | 199 a |
| Lumax EZ / Lumax EZ + Status + NIS + AMS | 1.5 qt/a / 1.5 qt/a + 5 oz wt/a + 0.25% v/v + 17 lb/100 gal | 99 | 97 | 99 | 194 abc |
| POST I (1-2" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 93 | 98 | 97 | 207 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 85 | 93 | 78 | 162 d |
| POST II (2-4" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 0 | 10 | 98 | 207 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 0 | 10 | 89 | 162 d |
| POST III (4-6" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 0 | 0 | 98 | 202 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 0 | 0 | 97 | 171 cd |
| LSD (P=0.10) | | 2 | 2 | 4 | 25 (P=.20) |

Table 6. Comparison of time of grass removal in preemergence and postemergence systems in field corn on May 30, June 9 and July 16 and crop yield at Rochester, MN, in 2014.

| Treatment | Rate (rate/A) | Plant Height | | SPAD | YIELD |
|---|---|--------------|----------|----------|-------------------|
| | | 6/18 | 7/1 | 6/25 | BU/A |
| | | (% Control) | | | |
| Untreated Check | | 24.1 | 47.1 | 42.6 | 46 e |
| PRE | | | | | |
| Surestart + Sharpen | 1.75 pt/a + 1 fl oz/a | 24 | 63.8 | 51.1 | 174 bcd |
| Verdict | 14 fl oz/a | 21.4 | 58.6 | 52.9 | 181 a-d |
| Lumax EZ | 3 qt/a | 23.8 | 62.1 | 54.2 | 197 ab |
| PRE / POST III (4-6" GIRW) | | | | | |
| Surestart + Sharpen / Laudis + Upland MSO + AMS | 1.75 pt/a + 1 fl oz/a / 3 fl oz/a + 1% v/v +17 lb/100 gal | 24.2 | 63.5 | 50.1 | 182 a-d |
| Surestart + Sharpen / Status + COC + AMS | 1.75 pt/a + 1 fl oz/a / 7.5 oz wt/a + 1% v/v +17 lb/100 gal | 24.3 | 61.8 | 52.4 | 163 d |
| Verdict / Laudis + Upland MSO + AMS | 14 fl oz/a / 3 fl oz/a + 1% v/v + 17 lb/100 gal | 22.6 | 59.0 | 51.7 | 194 abc |
| Verdict / Status + COC + AMS | 14 fl oz/a / 7.5 oz wt/a + 1% v/v + 17 lb/100 gal | 21.7 | 57.0 | 53.5 | 204 a |
| Lumax EZ / Lumax EZ + COC | 1.5 qt/a / 1.5 qt/a + 1% v/v | 25.8 | 62.6 | 50.7 | 199 a |
| Lumax EZ / Lumax EZ + Status + NIS + AMS | 1.5 qt/a / 1.5 qt/a + 5 oz wt/a + 0.25% v/v + 17 lb/100 gal | 25.9 | 62.5 | 49.7 | 194 abc |
| POST I (1-2" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 24.8 | 61.9 | 53.0 | 207 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 23.6 | 60.1 | 51.6 | 162 d |
| POST II (2-4" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 23.4 | 53.3 | 50.1 | 207 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 22.3 | 48.5 | 48.5 | 162 d |
| POST III (4-6" GIRW) | | | | | |
| Halex GT + Aatrex + NIS + AMS | 3.6 pt/a + 16 fl oz/a + 0.25% v/v + 17 lb/100 gal | 22.9 | 45.9 | 40.0 | 202 a |
| Roundup PowerMax + AMS | 32 fl oz/a + 17 lb/100 gal | 23.8 | 55.4 | 45.6 | 171 cd |
| LSD (P=0.10) | | NS | 4 | 4 | 25 (P=.20) |

Table 7. Comparison of time of weed removal in three Halex + Aatex postemergence systems in field corn on May 30, June 9 and July 16 and crop yield at Rochester, MN, in 2014.

| Pest Code | Giant ragweed | | | Common lambsquarters | | | Common waterhemp | | | Grass | | | SPAD ¹ Reading | HEIGHT (in) | YIELD | | |
|--------------------------------|--------------------|---------------|------|----------------------|-------------|-----------|------------------|-----------|-----------|-----------|-----------|-----------|---------------------------|---------------|---------------|-------------------|------------|
| | Rating Date | 5/30 | 6/9 | 7/16 | 5/30 | 6/9 | 7/16 | 5/30 | 6/9 | 7/16 | 5/30 | 6/9 | 7/16 | 6/25 | 7/1 | BU/A | |
| Trt No. | Treatment Name | Rate | Unit | Appl Code | (% Control) | | | | | | | | | | | | |
| POST I = 1-2 inch weeds | | | | | | | | | | | | | | | | | |
| 10 | SOA 5, 9, 15, & 27 | | | | | | | | | | | | | | | | |
| | HALEX GT | 3.6 pt/a | | B | | | | | | | | | | | | | |
| | AATREX | 16 fl oz/a | | B | 91 | 99 | 98 | 98 | 99 | 98 | 98 | 98 | 97 | 93 | 98 | 97 | |
| | NIS | 0.25% v/v | | B | | | | | | | | | | | | | |
| | AMS | 17 lb/100 gal | | B | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 53.0 a | 61.9 a | 207 a | |
| POST II 2-4 inch weeds | | | | | | | | | | | | | | | | | |
| 11 | SOA 5, 9, 15, & 27 | | | | | | | | | | | | | | | | |
| | HALEX GT | 3.6 pt/a | | C | | | | | | | | | | | | | |
| | AATREX | 16 fl oz/a | | C | 0 | 10 | 99 | 0 | 10 | 99 | 0 | 10 | 96 | 0 | 10 | 98 | |
| | NIS | 0.25% v/v | | C | | | | | | | | | | | | | |
| | AMS | 17 lb/100 gal | | C | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 50.1 a | 53.3 b | 202 a | |
| POST III 4-6 inch weeds | | | | | | | | | | | | | | | | | |
| 12 | SOA 5, 9, 15, & 27 | | | | | | | | | | | | | | | | |
| | HALEX GT | 3.6 pt/a | | D | | | | | | | | | | | | | |
| | AATREX | 16 fl oz/a | | D | 0 | 0 | 99 | 0 | 0 | 97 | 0 | 0 | 82 | 0 | 0 | 98 | |
| | NIS | 0.25% v/v | | D | | | | | | | | | | | | | |
| | AMS | 17 lb/100 gal | | D | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 40.0 b | 45.9 c | 162 d | |
| LSD P=.10 | | | | | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 3 | 1 | 2 | 3 | 3.8 |
| | | | | | | | | | | | | | | | 3.9 | 25 (P=.20) | |

1. SPAD reading was taken with a handheld chlorophyll meter. The meter measures greenness of corn leaves as reflected by the chlorophyll content and N status. Corn plant will reach maximum greenness with adequate nitrogen. When nitrogen stressed, the plants are less green (lower meter readings).

Table 8. Comparison of time of weed removal in three Roundup PowerMax postemergence systems in field corn on May 30, June 9 and July 16 and crop yield at Rochester, MN, in 2014.

| Pest Code | Giant ragweed | | | Common lambsquarters | | | Common waterhemp | | | Grass | | | SPAD ¹ Reading | HEIGHT (in) | YIELD | | | |
|--------------------------------|-----------------------------|----------------|-----------|----------------------|-----------|-----------|------------------|-----------|-----------|-----------|-----------|-----------|---------------------------|-------------|-----------|-----------------|-----------------|-------------------|
| | Rating Date | 5/30 | 6/9 | 7/16 | 5/30 | 6/9 | 7/16 | 5/30 | 6/9 | 7/16 | 5/30 | 6/9 | 7/16 | 6/25 | 7/1 | BU/A | | |
| Trt No. | Treatment Name | Rate Rate Unit | Appl Code | (% Control) | | | | | | | | | | | | | | |
| POST I = 1-2 inch weeds | | | | | | | | | | | | | | | | | | |
| 14 SOA 9 | | | | | | | | | | | | | | | | | | |
| | ROUNDUP POWERMAX AMS | 32 fl oz/a | B | 99 | 99 | 93 | 96 | 91 | 75 | 87 | 94 | 73 | 85 | 93 | 78 | 52.0 a-d | 60.1 bcd | 162 d |
| | | 17 lb/100 gal | B | | | | | | | | | | | | | | | |
| POST II 2-4 inch weeds | | | | | | | | | | | | | | | | | | |
| 15 SOA 9 | | | | | | | | | | | | | | | | | | |
| | ROUNDUP POWERMAX AMS | 32 fl oz/a | C | 0 | 10 | 99 | 0 | 10 | 86 | 0 | 10 | 91 | 0 | 10 | 89 | 48.5 ef | 52.0 h | 171 cd |
| | | 17 lb/100 gal | C | | | | | | | | | | | | | | | |
| POST III 4-6 inch weeds | | | | | | | | | | | | | | | | | | |
| 16 SOA 9 | | | | | | | | | | | | | | | | | | |
| | ROUNDUP POWERMAX AMS | 32 fl oz/a | D | 0 | 0 | 99 | 0 | 0 | 92 | 0 | 0 | 90 | 0 | 0 | 97 | 45.6 fg | 55.4 fg | 170 cd |
| | | 17 lb/100 gal | D | | | | | | | | | | | | | | | |
| LSD P=.10 | | | | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 3 | 1 | 2 | 3 | 3.8 | 3.9 | 25 (P=.20) |

1. SPAD reading was taken with a handheld chlorophyll meter. The meter measures greenness of corn leaves as reflected by the chlorophyll content and N status. Corn plant will reach maximum greenness with adequate nitrogen. When nitrogen stressed, the plants are less green (lower meter readings).

**Trt. 13
UNTREATED WEEDY**



6/3/14



46 bu/a

7/01/14 - Height 47.1 in (h)
6/25/14 - SPAD Reading 42.6

**Trt. 1 (SOA 2, 4, 14, 15)
Surestart 1.75 pt/a
+ Sharpen 1 fl oz/a
PRE sprayed on 5/6/14**



5/27/14



174 bu/a

7/01/14 - Height 63.8 in (a)
6/25/14 - SPAD Reading 51.1

**Trt. 2 (SOA 2, 4, 14, 15 / 27)
Surestart 1.75 pt/a + Sharpen 1 fl oz/a
PRE sprayed on 5/6/14
Laudis 3 fl oz/a + Upland MSO 1% V/V
+ AMS 17 lb/100 gal
POST III (4-6" GIRW) sprayed on 6/11/14**



6/3/14



182 bu/a

7/01/14 - Height 63.5 in (a)
6/25/14 - SPAD Reading 50.1

**Trt. 3 (SOA 2, 4, 14, 15 / 4, 19)
Surestart 1.75 pt/a
+ Sharpen 1 fl oz/a
PRE sprayed on 5/6/14
Status 7.5 oz wt/a + COC 1% V/V
+ AMS 17 lb/100 gal
POST III (4-6" GIRW)
sprayed on 6/11/14**



6/3/14



163 bu/a

7/01/14 - Height 61.8 in (abc)
6/25/14 - SPAD Reading 52.4

Trt. 4 (SOA 14, 15)
Verdict 14 fl oz/a
PRE sprayed on 5/6/14



6/3/14



181 bu/a

7/01/14 – Height 58.6 in (cde)
6/26/14 – SPAD Reading 51.7

Trt. 5 (SOA 14, 15 / 27)
Verdict 14 fl oz/a
PRE sprayed on 5/6/14
Laudis 3 fl oz/a + Upland MSO 1% V/V
+ AMS 17 lb/100 gal
POST III (4-6" GIRW) sprayed on 6/11/14



6/3/14



194 bu/a

7/01/14 - Height 59.0 in (b-e)
6/25/14 – SPAD Reading 51.7

Trt. 6 (SOA 14, 15 / 4, 19)
Verdict 14 fl oz/a
PRE sprayed on 5/6/14
Status 7.5 oz wt/a + COC1% V/V
+ AMS 17 lb/100 gal
POST III (4-6" GIRW) sprayed on 6/11/14



6/3/14



204 bu/a

7/01/14 – Height 57.0 in (def)
6/25/14 – SPAD Reading 53.5

Trt. 7 (SOA 5, 15, 27)
Lumax EZ 3 qt/a
PRE sprayed on 5/6/14



6/3/14



197 bu/a

7/01/14 – Height 62.1 in (abc)
6/25/14 – SPAD Reading 54.2

Trt. 8 (SOA 5, 15, 27/ 5, 15, 27)
Lumax EZ 1.5 qt/a
PRE sprayed on 5/6/14
Lumax EZ 1.5 qt/a + COC 1% V/V
POST III (4-6" GIRW) sprayed on
6/11/14



6/3/14



199 bu/a

7/01/14 – Height 62.6 in (ab)
6/25/14 – SPAD Reading 50.7

Trt. 9 (SOA 5, 15, 27 / 4, 5, 15, 19, 27)
Lumax EZ 1.5 qt/a
PRE sprayed on 5/6/14
Lumax EZ 1.5 qt/a + Status 5 oz wt/a + NIS
0.25% V/V + AMS 17 lb/100 gal
POST III (4-6" GIRW) sprayed on 6/11/14



6/3/14



194 bu/a

7/01/14 - Height 62.5 in (ab)
6/25/14 – SPAD Reading 49.7

Trt. 10 (SOA 5, 9, 15, 27)
Halex GT 3.6 pt/a + Aatrex 16 fl oz/a
+ NIS 0.25% V/V + AMS 17 lb/100 gal
POST I (1-2" GIRW) sprayed on
5/27/14



5/27/14



7/01/14 - Height 61.9 in (abc)
6/25/14 - SPAD Reading 53.0

Trt. 10(SOA 5, 9, 15, 27)
Halex GT 3.6 pt/a + Aatrex 16 fl oz/a + NIS 0.25% V/V + AMS 17 lb/100 gal
POST I (1-2" GIRW) sprayed on 5/27/14



Trt. 11 (SOA 5, 9, 15, 27)
Halex GT 3.6 pt/a + Aatrex 16 fl oz/a
+ NIS 0.25% V/V + AMS 17 lb/100 gal
POST II (2-4" GIRW) sprayed on
6/6/14



6/3/14



7/01/14 - Height 53.3 in (fg)
6/25/14 - SPAD Reading 50.1

Trt. 11(SOA 5, 9, 15, 27)
Halex GT 3.6 pt/a + Aatrex 16 fl oz/a + NIS 0.25% V/V + AMS 17 lb/100 gal
POST II (2-4" GIRW) sprayed on 6/6/14



Trt. 12 (SOA 5, 9, 15, 27)
Halex GT 3.6 pt/a + Aatrex 16 fl oz/a
+ NIS 0.25% V/V + AMS 17 lb/100 gal
POST III (4-6" GIRW) sprayed on
6/11/14



6/6/14



162 bu/a

7/01/14 - Height 45.9 in (h)
6/25/14 - SPAD Reading 40.0

Trt. 12(SOA 5, 9, 15, 27)
Halex GT 3.6 pt/a + Aatrex 16 fl oz/a + NIS 0.25% V/V + AMS 17 lb/100 gal
POST III (4-6" GIRW) sprayed on 6/11/14



162 bu/a

Trt. 14 (SOA 9)
Roundup Powermax 32 fl oz/a
+ AMS 17 lb/100 gal
POST I (1-2" GIRW) sprayed on
5/27/14



5/27/14



162 bu/a

7/01/14 – Height 60.1 in (a-d)
6/25/14 – SPAD Reading 51.6

Trt. 14(SOA 9)
Roundup Powermax 32 fl oz/a + AMS 17 lb/100 gal
POST I (1-2" GIRW) sprayed on 5/27/14



162 bu/a

Trt. 15 (SOA 9)
Roundup Powermax 32 fl oz/a +
AMS 17 lb/100 gal
POST II (2-4" GIRW) sprayed on
6/6/14



6/3/14



171 bu/a

7/01/14 – Height 52.0 in (g)
6/25/14 – SPAD Reading 48.5

Trt. 15(SOA 9)
Roundup Powermax 32 fl oz/a + AMS 17 lb/100 gal
POST II (2-4" GIRW) sprayed on 6/6/14



171 bu/a

Trt. 16 (SOA 9)
Roundup Powermax 32 fl oz/a +
AMS 17 lb/100 gal
POST III (4-6" GIRW) sprayed on
6/11/14



6/6/14



170 bu/a

7/01/14 – Height 55.4 in (efg)
6/25/14 – SPAD Reading 45.6

Trt. 16(SOA 9)
Roundup Powermax 32 fl oz/a + AMS 17 lb/100 gal
POST III (4-6" GIRW) sprayed on 6/11/14



170 bu/a