

Weed management in conventional corn. Waltz, Aaron L., Alex R. Martin, and Jess J.

Spotanski. A field study was conducted to evaluate pre, sequential pre/post, and postemergent weed control in conventionally-tilled field corn. A randomized complete block design with three replications per treatment was utilized. The study was conducted on a Kennebec silt loam with 2.4% organic matter and a pH of 6.9. Seedbed preparation consisted of disking one week prior to planting and one field cultivation the day of planting. Individual plots consisted of six 30-inch rows, each 30 feet long. 'Asgrow RX730YG' corn was planted May 14 at a population of 20,300 seeds/acre. Treatments were applied with a tractor-mounted sprayer traveling 2.5 mph. Application, crop, weed, and environmental data are presented below:

| Date | May 14 | June 5 | June 13 |
|-------------------------------|----------|----------|---------|
| Treatment | PRE | EPOST | POST |
| Sprayer | | | |
| gpa | 20 | 20 | 20 |
| psi | 40 | 40 | 40 |
| Temperature (°F) | | | |
| Air | 78 | 76 | 65 |
| Soil (4 inch) | 61 | 79 | 75 |
| Soil Moisture | Adequate | Adequate | Dry |
| Wind (mph) | 12 | 7 | 6 |
| Sky (% cloudy) | 70 | 80 | 50 |
| Relative Humidity (%) | 22 | 29 | 63 |
| Precip. after appl. | | | |
| Week 1 (inch) | 0.0 | 0.08 | 0.0 |
| Week 2 (inch) | 2.6 | 0.00 | 0.0 |
| Corn | | | |
| Leaf no. | -- | 2 | 5 |
| Height (inch) | -- | 6 | 12 |
| Common sunflower | | | |
| Leaf no. | -- | 3-4 | 4-6 |
| Height (inch) | -- | 1.5-3 | 4-7 |
| Infestation (m ²) | -- | 10 | 5 |
| Velvetleaf | | | |
| Leaf no. | -- | 2-3 | 4-8 |
| Height (inch) | -- | 1-2 | 2-8 |
| Infestation (m ²) | -- | 50 | 30 |
| Annual grasses | | | |
| Leaf no. | -- | 2-3 | 5 |
| Height (inch) | -- | 0.5-2.5 | 5 |
| Infestation (m ²) | -- | 3 | 2 |
| Pigweed species | | | |
| Leaf no. | -- | 3-9 | many |
| Height (inch) | -- | 0.5-3 | 8-11 |
| Infestation (m ²) | -- | 30 | 10 |

Summary comments: Precipitation was good until early June, then conditions were very dry. Grass species include green and giant foxtail with some fall panicum and large crabgrass. Pigweed species include mostly Palmer amaranth, with some redroot pigweed and common waterhemp. The PRE only treatments did not give adequate common sunflower and velvetleaf control, whereas most of the sequential and POST treatments gave adequate season-long weed control. Results of the study are summarized in the following table (Dept. of Agronomy and Horticulture, University of Nebraska-Lincoln).

Table. Weed management in conventional corn (Waltz, Martin, and Spotski).

| Treatment | Application | | ----HELAN---- | | | ----ABUTH---- | | | ----GGAN ^a ---- | | | ----AMASS ^b ---- | | |
|--|--|---------------|---------------|------|-----|---------------|------|-----|----------------------------|------|-----|-----------------------------|------|-----|
| | Rate (lb/A) | Timing | 6/28 | 7/11 | 8/8 | 6/28 | 7/11 | 8/8 | 6/28 | 7/11 | 8/8 | 6/28 | 7/11 | 8/8 |
| -----% weed control----- | | | | | | | | | | | | | | |
| S-metolachlor&CGA-154281/ nicosulfuron& rimsulfuron+ mesotrione+ atrazine+ COC ^c + AMS ^d | 0.96 0.023 0.012 0.047 0.75 1.0% 2.0 | PRE/ EPOST | 98 | 98 | 98 | 97 | 96 | 96 | 100 | 100 | 100 | 98 | 98 | 98 |
| S-metolachlor&CGA-154281/ nicosulfuron& rimsulfuron+ dicamba& atrazine+ COC+ AMS | 0.96 0.023 0.012 0.138 0.26 1.0% 2.0 | PRE/ EPOST | 100 | 100 | 100 | 87 | 82 | 77 | 100 | 98 | 98 | 100 | 100 | 100 |
| S-metolachlor&CGA-154281/ nicosulfuron& rimsulfuron+ dicamba& SAN 1269H+ atrazine+ COC+ AMS | 0.96 0.023 0.012 0.062 0.025 0.75 1.0% 2.0 | PRE/ EPOST | 100 | 100 | 100 | 92 | 85 | 85 | 100 | 98 | 97 | 100 | 100 | 100 |
| Nicosulfuron& rimsulfuron+ mesotrione+ dicamba& SAN 1269H+ atrazine+ COC+ AMS | 0.023 0.012 0.047 0.031 0.013 0.75 1.0% 2.0 | EPOST | 100 | 100 | 100 | 97 | 95 | 95 | 93 | 92 | 90 | 100 | 100 | 100 |
| Nicosulfuron& rimsulfuron+ mesotrione+ atrazine+ COC+ AMS | 0.023 0.012 0.063 0.25 1.0% 2.0 | EPOST | 100 | 98 | 98 | 95 | 93 | 93 | 97 | 97 | 97 | 100 | 98 | 95 |
| Nicosulfuron& rimsulfuron+ mesotrione+ atrazine+ COC+ AMS | 0.023 0.012 0.063 0.75 1.0% 2.0 | EPOST | 100 | 100 | 100 | 97 | 95 | 95 | 100 | 98 | 97 | 100 | 98 | 98 |
| Nicosulfuron& rimsulfuron+ mesotrione+ S-metolachlor&CGA-154281& atrazine+ COC+ AMS | 0.023 0.012 0.063 0.6 0.78 1.0% 2.0 | EPOST | 100 | 100 | 100 | 95 | 95 | 95 | 98 | 97 | 95 | 100 | 100 | 100 |
| Nicosulfuron& rimsulfuron+ dicamba& atrazine+ flumetsulam& cloprralid+ COC+ AMS | 0.023 0.012 0.138 0.26 0.014 0.047 1.0% 2.0 | EPOST | 100 | 100 | 97 | 88 | 83 | 83 | 98 | 97 | 97 | 97 | 93 | 93 |
| Acetochlor& atrazine/ flumetsulam& cloprralid+ mesotrione+ atrazine+ 28% ^e + COC | 1.8 1.2 0.035 0.113 0.047 0.225 2.5% 1.0% | PRE/ EPOST | 100 | 100 | 100 | 95 | 92 | 92 | 100 | 99 | 98 | 100 | 100 | 100 |

(continued)

Table. Weed management in conventional corn (Waltz, Martin, and Spotanski), continued.

| Treatment | Application | | -----HELAN----- | | | -----ABUTH----- | | | -----GGGAN ^a ----- | | | -----AMASS ^b ----- | | |
|--|--|---------------|-----------------|------|-----|-----------------|------|-----|-------------------------------|------|-----|-------------------------------|------|-----|
| | Rate (lb/A) | Timing | 6/28 | 7/11 | 8/8 | 6/28 | 7/11 | 8/8 | 6/28 | 7/11 | 8/8 | 6/28 | 7/11 | 8/8 |
| -----% weed control----- | | | | | | | | | | | | | | |
| Acetochlor& atrazine/ flumetsulam& clopyralid+ atrazine+ 28%+ NIS ^f | 1.8 1.2 0.035 0.113 1.0 2.5% 0.25% | PRE/ EPOST | 100 | 98 | 100 | 95 | 93 | 92 | 100 | 100 | 98 | 100 | 100 | 100 |
| Acetochlor& atrazine/ flumetsulam& clopyralid+ carfentrazone+ 28%+ NIS | 1.8 1.2 0.035 0.113 0.005 2.5% 0.25% | PRE/ EPOST | 98 | 98 | 98 | 87 | 85 | 82 | 97 | 97 | 97 | 100 | 100 | 100 |
| Acetochlor& atrazine+/ flumetsulam& clopyralid+ dicamba+ 28%+ NIS | 1.8 1.2 0.035 0.113 0.25 2.5% 0.25% | PRE/ EPOST | 100 | 100 | 100 | 88 | 83 | 83 | 98 | 98 | 97 | 100 | 100 | 100 |
| Dimethenamid-P& atrazine | 0.85 1.65 | PRE | 60 | 60 | 43 | 20 | 7 | 3 | 100 | 98 | 98 | 100 | 100 | 98 |
| Dimethenamid-P& atrazine/ dicamba& SAN 1269H+ NIS+ AMS | 0.85 1.65 0.125 0.05 0.25% 1.0 | PRE/ POST | 100 | 100 | 100 | 83 | 83 | 83 | 100 | 99 | 96 | 100 | 100 | 100 |
| Dimethenamid-P& atrazine/ dicamba+ AMS | 0.85 1.65 0.5 2.5 | PRE/ EPOST | 100 | 100 | 100 | 82 | 77 | 73 | 93 | 93 | 92 | 100 | 100 | 100 |
| Dimethenamid-P/ dicamba& atrazine+ AMS | 0.94 0.48 0.92 2.5 | PRE/ EPOST | 100 | 100 | 100 | 93 | 87 | 87 | 93 | 93 | 92 | 100 | 98 | 98 |
| Dimethenamid-P/ dicamba& SAN 1269H+ NIS+ AMS | 0.94 0.125 0.05 0.25% 1.0 | PRE/ POST | 100 | 98 | 93 | 88 | 83 | 83 | 100 | 100 | 100 | 100 | 97 | 97 |
| Dimethenamid-P/ dicamba+ AMS | 0.94 0.5 2.5 | PRE/ EPOST | 100 | 100 | 100 | 80 | 75 | 73 | 100 | 97 | 93 | 100 | 97 | 97 |
| Dimethenamid-P& atrazine+ isoxaflutole | 0.85 1.65 0.047 | PRE | 88 | 85 | 62 | 80 | 73 | 70 | 98 | 97 | 97 | 97 | 97 | 97 |
| Check | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LSD (P=.05) | | | 13 | 13 | 17 | 7 | 8 | 9 | 7 | 7 | 7 | 3 | 4 | 4 |

^aGGGAN = green and giant foxtail, with some fall panicum and large crabgrass^bAMASS = mostly Palmer amaranth, with little common waterhemp and redroot pigweed^cCOC = 'Prime Oil' by Agrilience^dAMS = 'N-Pa-K' by Agrilience^e28% = 'Class' by Agrilience^fNIS = 'Preference' by Agrilience