

Annual weed control with Liberty, Laudis, Callisto, Lumax, and Define in Liberty-Link corn at Lamberton, MN in 2007. Getting, Jodie K. The objective of this study was to evaluate glufosinate tank mixed with Laudis, Callisto, Lumax, or Define for annual grass and annual broadleaf weed control in corn. This study was conducted on a Normania loam soil containing 4.7% organic matter, pH 6.3 and soil test P and K levels of 34 and 380 lb/A, respectively. A randomized complete block design with four replications and a plot size of 10 by 30 ft was used. The site was planted to oats in 2006 and was fall chiseled. The area was fertilized with 140-60-60 on April 20, 2007. On May 2, 2007, Pioneer '35F40' glufosinate resistant/glyphosate resistant field corn was planted in 30-inch rows at a seeding rate of 33,000 seeds/A. Tefluthrin (Force) was applied at 5.0 oz/1000 row feet in a T-band for the control of northern corn rootworm larvae. All treatments were applied with a tractor-mounted sprayer delivering 20 gpa at a pressure of 40 psi. The sprayer was equipped with 8002 flat-fan nozzles spaced 15 inches apart on the boom. Application dates, environmental conditions, plant sizes and rainfall data are listed below:

| Date | May 2 | May 21 | May 30 |
|-----------------------------------|-------|------------|---------|
| Treatment | PRE | POST I | POST II |
| Temperature (F) | | | |
| air | 64 | 66 | 64 |
| soil (4 inch) | 66 | 66 | 66 |
| Relative humidity (%) | 30 | 68 | 94 |
| Wind (mph) | E 5 | S 10 | SE 12 |
| Sky | clear | clear | clear |
| Soil moisture | dry | dry | dry |
| Corn | | | |
| leaf no. | - | V2 | V4 |
| height (inch) | - | 3 | 8 |
| Yellow foxtail | | | |
| leaf no. | - | 2 to 3 | 3 to 4 |
| height (inch) | - | 1 to 1.5 | 3 to 5 |
| no./ft ² | - | 41 | 23 |
| Common lambsquarters | | | |
| leaf no. | - | 2 to 3 | 5 to 7 |
| height (inch) | - | 0.5 to 1.0 | 2 to 4 |
| no./ft ² | - | 2 | 2 |
| Tall waterhemp | | | |
| leaf no. | - | 2 to 3 | 3 to 5 |
| height (inch) | - | 0.5 to 1.0 | 2 to 4 |
| no./ft ² | - | 18 | 10 |
| Rainfall after application (inch) | | | |
| 1 week | 1.96 | 0.27 | 1.93 |
| 2 week | 0.02 | 1.97 | 0.21 |
| 3 week | 0.26 | 0.24 | 1.43 |

(Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Annual weed control with Liberty, Laudis, Callisto, Lumax, and Define in Liberty-Link corn at Lamberton, MN in 2007 (Getting).

| Treatment ^a | Rate (oz/A, pt/A, qt/A, or lb/A) | Yellow foxtail | | | | Common lambsquarters | | | | Tall waterhemp | | | | Yield ^b (bu/A) |
|---|-------------------------------------|-----------------------|-----|------|------|-------------------------|-----|------|------|-------------------|-----|------|------|------------------------------|
| | | 5/30 | 6/7 | 6/18 | 8/21 | 5/30 | 6/7 | 6/18 | 8/21 | 5/30 | 6/7 | 6/18 | 8/21 | |
| | | -----(% control)----- | | | | | | | | | | | | |
| <u>Preemergence/POST II (3 to 4-inch weeds)</u> | | | | | | | | | | | | | | |
| Atrazine / SP102000017385 + AMS | 2 pt / 22 oz + 2 qt | 33 | 98 | 89 | 90 | 80 | 100 | 98 | 96 | 35 | 100 | 86 | 88 | 176 |
| Harness Xtra / SP102000017385 + AMS | 1.2 qt / 22 oz + 2 qt | 93 | 100 | 98 | 97 | 97 | 100 | 100 | 99 | 97 | 100 | 100 | 99 | 177 |
| Harness / SP102000017385 + AMS | 1.25 pt / 22 oz + 2 qt | 86 | 99 | 96 | 95 | 95 | 100 | 99 | 98 | 95 | 100 | 100 | 98 | 170 |
| Atrazine / Liberty + Laudis + AMS | 2 pt / 32 oz + 2 oz +2 qt | 30 | 99 | 92 | 92 | 73 | 100 | 99 | 99 | 28 | 100 | 98 | 99 | 186 |
| Atrazine / SP102000017385 + Laudis + AMS | 2 pt / 22 oz + 2 oz +2 qt | 33 | 100 | 93 | 91 | 70 | 100 | 99 | 97 | 35 | 100 | 96 | 95 | 184 |
| Atrazine / SP102000017385 + Callisto + AMS | 2 pt / 22 oz + 2 oz +2 qt | 35 | 100 | 91 | 93 | 65 | 100 | 100 | 99 | 28 | 100 | 99 | 99 | 187 |
| Harness Xtra / Roundup Weathermax + AMS | 1.2 qt / 22 oz + 2 qt | 91 | 100 | 96 | 97 | 95 | 100 | 100 | 99 | 97 | 100 | 100 | 99 | 176 |
| <u>POST I (1 to 2-inch weeds)</u> | | | | | | | | | | | | | | |
| SP102000017385 + Lumax + AMS | 22 oz + 2 qt +2 qt | 100 | 100 | 94 | 95 | 100 | 100 | 100 | 99 | 100 | 100 | 100 | 99 | 170 |
| SP102000017385 + Laudis + Define + Atrazine + AMS | 22 oz + 2 oz + 6 oz + 1 pt + 2 qt | 100 | 95 | 89 | 92 | 100 | 100 | 99 | 97 | 100 | 100 | 92 | 93 | 180 |
| <u>Check</u> | | | | | | | | | | | | | | |
| Weedy check | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| | LSD (0.10) | 8.9 | 2.5 | 3.7 | 3.4 | 6.6 | ns | 1.0 | 1.4 | 6.7 | ns | 3.5 | 2.5 | 16.8 |

^a AMS = liquid spray grade ammonium sulfate.

^b Yield adjusted to 15.5% moisture.