## Annual weed control with fall applied BAS 94461H in no-till and conventional spring tillage in corn at Lamberton, MN in 2010.

Getting, Jodie K.

The objective of this study was to evaluate fall applied BAS 94461H in no-till and conventional spring tillage for annual grass and annual broadleaf weed control in corn. This study was conducted on a Normania loam soil containing 3.8% organic matter, pH 6.1 and soil test P and K levels of 64 and 296 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 soybeans in 2009. The area was fertilized with 135 lbs nitrogen as anhydrous ammonia prior to fall herbicide application. On May 5, 2010, Dekalb 'DK 53-78' glufosinate resistant/glyphosate resistant field corn was planted in 30-inch rows at a seeding rate of 33,000 seeds/A. The conventional tilled plots were field cultivated prior to planting. 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 | Nov 23 | June 3 | |
|---|---|---|---|
| Treatment | Fall | POST | |
| Temperature (F) | | | |
| air | 46 | 52 | |
| soil (4 inch) | 42 | 68 | |
| Relative humidity (%) | 87 | 67 | |
| Wind (mph) | S 8 | W 3 | |
| Sky | cloudy | clear | |
| Soil moisture | dry | dry | |
| Corn | | | |
| leaf no. | - | V4 | |
| height (inch) | - | 8 | |
| | | no-till | spring-till |
| Yellow foxtail, Barnyardgrass | | | |
| leaf no. | - | 3 to 5 | 2 to 4 |
| height (inch) | - | 4 to 8 | 2 to 4 |
| no./ft$^2$ in check | - | 8 | 9 |
| Common lambsquarters | | | |
| leaf no. | - | 8 to 14 | 3 to 5 |
| height (inch) | - | 4 to 10 | 1 to 3 |
| no./ft$^2$ in check | - | 3 | 1 |
| Redroot pigweed | | | |
| leaf no. | - | 2 to 4 | 2 to 4 |
| height (inch) | - | 2 to 4 | 1 to 3 |
| no./ft$^2$ in check | - | <1 | 3 |
| Wild Buckwheat | | | |
| leaf no. | - | vining, flowering | 2 to 4 |
| height (inch) | - | - | 1 to 3 |
| no./ft$^2$ in check | - | 2 | <1 |
| Rainfall after application (inch) | | | |
| 1 week | 0.33 | 0.75 | |
| 2 week | 0.09 | 2.55 | |
| 3 week | 0.19 | 1.45 | |

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

**Table. Annual weed control with fall applied BAS 94461H in no-till and conventional spring tillage in corn at Lamberton, MN in 2010 (Getting).**

| | | Yellow foxtail | | | | Common lambsquarters | | | | Redroot pigweed | | | | Wild Buckwheat | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Treatment[a] | Rate | May 5 | Jun 3 | Jun 15 | Aug 17 | May 5 | Jun 3 | Jun 15 | Aug 17 | May 5 | Jun 3 | Jun 15 | Aug 17 | May 5 | Jun 3 | Jun 15 | Aug 17 | Yield[b] |
| | | ---------- (% control) ---------- | | | | | | | | | | | | | | | | (bu/A) |
| **Fall/POST (Roundup Weathermax + Status + NIS + AMS) No spring tillage** | | | | | | | | | | | | | | | | | | |
| BAS 94461H | 2.1 oz | 35 g | 73 cd | 99 a | 89 de | 28 c | 18 f | 99 a | 96 ab | - | 94 ab | 99 a | 94 b-d | 0 c | 0 c | 78 c | 98 a | 218 b-d |
| BAS 94461H | 2.64 oz | 53 f | 83 ab | 99 b | 89 de | 35 bc | 28 e | 99 a | 96 ab | - | 97 a | 99 a | 96 a-c | 0 c | 0 c | 75 c | 96 b | 210 d |
| Dual II Magnum | 32 oz | 81 b | 84 ab | 99 a | 90 c-e | 45 b | 23 ef | 99 a | 92 c-e | - | 97 a | 99 a | 91 d | 0 c | 0 c | 83 b | 98 a | 216 cd |
| Integrity | 16 oz | 98 a | 70 d | 99 b | 88 e | 98 a | 90 a | 99 a | 91 de | - | 97 a | 99 a | 90 d | 97 a | 93 a | 95 a | 98 a | 234 a |
| Outlook | 14 oz | 75 cd | 78 b-d | 99 a | 84 f | 38 bc | 25 ef | 99 a | 89 e | - | 96 ab | 99 a | 84 e | 0 c | 0 c | 76 c | 96 b | 216 cd |
| Weedy check | | 0 h | 0 e | 0 c | 0 g | 0 d | 0 g | 0 b | 0 f | - | 0 f | 0 b | 0 f | 0 c | 0 c | 0 d | 0 c | 8 f |
| **Fall/POST (Roundup Weathermax + Status + NIS + AMS) Spring field cultivate** | | | | | | | | | | | | | | | | | | |
| BAS 94461H | 2.1 oz | 56 f | 86 ab | 99 a | 93 ab | 35 bc | 73 bc | 99 a | 97 ab | - | 76 c | 99 a | 97 ab | 0 c | 0 c | 99 a | 98 a | 231 ab |
| BAS 94461H | 2.64 oz | 65 e | 79 b-d | 99 a | 93 a-c | 35 bc | 71 bc | 99 a | 98 a | - | 89 ab | 99 a | 98 a | 0 c | 0 c | 96 a | 98 a | 227 a-c |
| Dual II Magnum | 32 oz | 70 de | 90 a | 99 a | 94 a | 40 bc | 69 cd | 99 a | 95 a-c | - | 88 b | 99 a | 94 a-d | 0 c | 0 c | 97 a | 98 a | 227 a-c |
| Integrity | 16 oz | 98 a | 80 bc | 99 a | 91 b-d | 98 a | 79 b | 99 a | 97 a | - | 35 e | 99 a | 92 cd | 95 b | 90 b | 99 a | 98 a | 228 a-c |
| Outlook | 14 oz | 80 bc | 79 b-d | 99 a | 90 c-e | 30 bc | 63 d | 99 a | 94 b-d | - | 65 d | 99 a | 90 d | 0 c | 0 c | 95 a | 98 a | 224 a-c |
| Weedy check | | 0 h | 0 d | 0 c | 0 g | 0 d | 0 g | 0 b | 0 f | - | 0 f | 0 b | 0 f | 0 c | 0 c | 0 d | 0 c | 167 e |
| | LSD (0.10) | 6.1 | 8.9 | 0.2 | 2.8 | 15.9 | 8.7 | ns | 3.3 | - | 9.0 | ns | 4.2 | 1.4 | 1.4 | 4.8 | 1.9 | 13.6 |

[a] NIS = nonionic surfactant; AMS = liquid spray grade ammonium sulfate.

[b] Yield adjusted to 15.5% moisture.