

Weed control with soil applied Basis, Basis + atrazine and POST applied Roundup Weathermax, DPX E9636, Harmony GT, Clarity, atrazine, Harness, Steadfast, and Callisto in corn at Lamberton, MN in 2005. Getting, Jodie K. The objective of this study was to evaluate soil applied Basis and Basis + atrazine and POST applied Roundup Weathermax tank mixes with DPX E9636, Harmony GT, Clarity, atrazine, and Harness. This study was conducted on a Ves loam soil containing 4.3% organic matter, pH 6.5 and soil test P and K levels of 26 and 332 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 corn in 2004 and was fall chiseled. The area was fertilized with 180 lb/A of nitrogen as urea. On April 28, 2005, Pioneer '38H69' field corn was planted in 30-inch rows at a seeding rate of 33,000 seeds/A. Tefluthrin (Force) was applied at 5 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                              | April 29 | June 6    |
|-----------------------------------|----------|-----------|
| Treatment                         | PRE      | POST      |
| Temperature (F)                   |          |           |
| air                               | 45       | 72        |
| soil (4 inch)                     | 42       | 74        |
| Relative humidity (%)             | 34       | 69        |
| Wind (mph)                        | W 5-8    | calm      |
| Sky                               | clear    | clear     |
| Soil moisture                     | dry      | moist     |
| Corn                              |          |           |
| leaf no.                          | -        | V4        |
| height (inch)                     | -        | 6         |
| Giant foxtail                     |          |           |
| leaf no.                          | -        | 2 to 4    |
| height (inch)                     | -        | 2 to 4    |
| no./ft <sup>2</sup>               | -        | 48        |
| Common lambsquarters              |          |           |
| leaf no.                          | -        | 2 to 4    |
| height (inch)                     | -        | 1 to 2    |
| no./ft <sup>2</sup>               | -        | 9         |
| Tall waterhemp                    |          |           |
| leaf no.                          | -        | 1 to 2    |
| height (inch)                     | -        | 0.25 to 1 |
| no./ft <sup>2</sup>               | -        | 14        |
| Rainfall after application (inch) |          |           |
| 1 week                            | 0.36     | 1.82      |
| 2 week                            | 3.78     | 0.32      |
| 3 week                            | 1.45     | 0.27      |

None of the herbicide treatments caused visible crop injury. The trial area received 5.59 inches of precipitation the first three weeks after preemergence herbicide application. On June 7, Basis applied preemergence alone at 0.33 oz, 0.67 oz, and 1 oz provided 40, 54, and 55% giant foxtail control, respectively. The addition of 1 lb of atrazine to the respective rates of Basis provided 51, 59, and 63% control, respectively. Harness Xtra gave 94% control. Basis at 0.33 oz, 0.67 oz, and 1 oz resulted in 49, 74, and 80% common lambsquarters control and 46, 59, and 75% tall waterhemp control, respectively. All other herbicide treatments resulted in 97% or greater common lambsquarters and tall waterhemp control. On August 25, Roundup Weathermax + Harness resulted in 90% giant foxtail control. Harness Xtra followed by Roundup Weathermax and Bicep II Magnum followed by Steadfast + Callisto + atrazine gave 88% control. All other treatments gave 76 to 84% control. All herbicide treatments provided greater than 94% common lambsquarters control. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Weed control with soil applied Basis, Basis + atrazine and POST applied Roundup Weathermax, DPX E9636, Harmony GT, Clarity, atrazine, Harness, Steadfast, and Callisto in corn at Lamberton, MN in 2005. (Getting).

| Treatment <sup>a</sup>   | Rate<br>(oz/A, pt/A, lb/A or %)                   | Giant<br>foxtail      |      |     |      | Common<br>lambsquarters |      |     |      | Tall<br>waterhemp |      |     |      | Yield<br>(bu/A) <sup>b</sup> |
|--|---|-----------------------|------|-----|------|-------------------------|------|-----|------|-------------------|------|-----|------|------------------------------|
|  |   | 6/7                   | 6/20 | 7/5 | 8/25 | 6/7                     | 6/20 | 7/5 | 8/25 | 6/7               | 6/20 | 7/5 | 8/25 |                              |
|  |   | -----(% control)----- |      |     |      |                         |      |     |      |                   |      |     |      |                              |
| <u>POST (V4 corn)</u>  |   |                       |      |     |      |                         |      |     |      |                   |      |     |      |                              |
| Roundup Weathermax + AMS   | 22 oz + 2 lb                                      | -                     | 95   | 87  | 80   | -                       | 97   | 96  | 96   | -                 | 99   | 88  | 90   | 168                          |
| Roundup Weathermax<br>+ DPX-E9636 + AMS                          | 22 oz<br>+ 1 oz + 2 lb                            | -                     | 98   | 89  | 79   | -                       | 100  | 97  | 97   | -                 | 100  | 97  | 95   | 169                          |
| Roundup Weathermax<br>+ DPX-E9636 + Harmony GT + AMS             | 22 oz<br>+ 1 oz + 0.063 oz + 2 lb                 | -                     | 98   | 88  | 80   | -                       | 99   | 97  | 97   | -                 | 100  | 91  | 91   | 168                          |
| Roundup Weathermax<br>+ DPX-E9636 + Clarity + AMS                | 22 oz<br>+ 1 oz + 4 oz + 2 lb                     | -                     | 97   | 87  | 76   | -                       | 100  | 97  | 97   | -                 | 100  | 92  | 88   | 173                          |
| Roundup Weathermax<br>+ DPX-E9636 + Atrazine + AMS               | 22 oz<br>+ 1 oz + 0.5 lb + 2 lb                   | -                     | 98   | 90  | 78   | -                       | 100  | 97  | 97   | -                 | 100  | 97  | 97   | 179                          |
| Roundup Weathermax<br>+ Harness + AMS                            | 22 oz<br>+ 1.5 pt + 2 lb                          | -                     | 98   | 95  | 90   | -                       | 100  | 98  | 97   | -                 | 100  | 97  | 97   | 183                          |
| Steadfast + Callisto + Atrazine<br>+ COC + AMS                   | 0.75 oz + 1.5 oz + 0.75 lb<br>+ 1% + 2 lb         | -                     | 99   | 91  | 84   | -                       | 100  | 98  | 97   | -                 | 100  | 98  | 97   | 177                          |
| <u>Preemergence/POST (V4 corn)</u>                               |   |                       |      |     |      |                         |      |     |      |                   |      |     |      |                              |
| Basis / Roundup Weathermax + AMS                                 | 0.33 oz / 22 oz + 2 lb                            | 40                    | 94   | 89  | 83   | 49                      | 100  | 97  | 97   | 46                | 99   | 91  | 89   | 185                          |
| Basis / Roundup Weathermax + AMS                                 | 0.67 oz / 22 oz + 2 lb                            | 54                    | 93   | 86  | 80   | 74                      | 99   | 95  | 95   | 59                | 99   | 93  | 93   | 176                          |
| Basis / Roundup Weathermax + AMS                                 | 1 oz / 22 oz + 2 lb                               | 55                    | 91   | 87  | 82   | 80                      | 96   | 93  | 94   | 75                | 97   | 93  | 92   | 177                          |
| Basis + Atrazine /<br>Roundup Weathermax + AMS                   | 0.33 oz + 1 lb /<br>22 oz + 2 lb                  | 51                    | 93   | 88  | 80   | 98                      | 99   | 97  | 97   | 98                | 99   | 95  | 95   | 180                          |
| Basis + Atrazine /<br>Roundup Weathermax + AMS                   | 0.67 oz + 1 lb /<br>22 oz + 2 lb                  | 59                    | 91   | 86  | 78   | 98                      | 99   | 97  | 97   | 98                | 98   | 95  | 95   | 185                          |
| Basis + Atrazine /<br>Roundup Weathermax + AMS                   | 1 oz + 1 lb /<br>22 oz + 2 lb                     | 63                    | 92   | 85  | 78   | 97                      | 99   | 95  | 95   | 98                | 100  | 94  | 94   | 181                          |
| Harness Xtra /<br>Roundup Weathermax + AMS                       | 3 pt /<br>22 oz + 2 lb                            | 94                    | 98   | 95  | 88   | 98                      | 100  | 97  | 97   | 98                | 100  | 97  | 96   | 180                          |
| Bicep II Magnum / Steadfast + Callisto<br>+ Atrazine + COC + AMS | 24 oz / 0.75 oz + 1.5 oz<br>+ 0.75 lb + 1% + 2 lb | 81                    | 99   | 93  | 88   | 98                      | 100  | 97  | 98   | 97                | 100  | 97  | 98   | 177                          |
| <u>Checks</u>  |   |                       |      |     |      |                         |      |     |      |                   |      |     |      |                              |
| Weedy  |   | 0                     | 0    | 0   | 0    | 0                       | 0    | 0   | 0    | 0                 | 0    | 0   | 0    | 16                           |
|  | LSD (0.10)  | 8.3                   | 2.6  | 3.4 | 6.1  | 13.2                    | 1.8  | 2.4 | 2.1  | 15.4              | 1.6  | 4.5 | 5.5  | 11.5                         |

<sup>a</sup> COC = crop oil concentrate; AMS = spray grade ammonium sulfate.

<sup>b</sup> Yield adjusted to 15.5% moisture.