Evaluation of glyphosate programs in soybeans. Horky, Kevin T. and Alex R. Martin. A field study was conducted to evaluate the efficacy of weed control programs using glyphosate in soybeans. A randomized complete block design with three replications per treatment was utilized. The study was conducted on a Sharpsburg silty clay loam with 3.1% organic matter and a pH of 6.7. Individual plots consisted of six 30-inch rows, each 30 feet long. 'Asgrow 2703' soybeans were planted June 2 at a population of 134,000 seeds per acre. Treatments were applied with a tractor-mounted sprayer traveling 3.0 mph. EPOST treatments were applied 15 days after planting, MPOST treatments were applied 27 days after planting, and LPOST treatments were applied 41 days after planting. Application, crop, weed, and environmental data are presented below:

| Date | June 2 | June 17 | June 29 | July 13 |
|---|---|---|---|---|
| Treatment | PRE | EPOST | MPOST | LPOST |
| Sprayer | | | | |
| gpa | 15 | 15 | 15 | 15 |
| psi | 30 | 30 | 30 | 30 |
| Temperature (°C) | | | | |
| air | 18 | 24 | 28 | 28 |
| soil (4 inch) | 18 | 48 | 20 | 21 |
| Soil Moisture | adequate | adequate | adequate | adequate |
| Wind (mph) | 5 | 7 | 4 | 1 |
| Sky (% cloudy) | 15 | 15 | 30 | 30 |
| Relative | | | | |
| humidity (%) | 57 | 55 | 32 | 70 |
| Precip. After appl. (inches) | | | | |
| week 1 | 0.18 | 1.53 | 2.92 | 0.26 |
| week 2 | 1.01 | 0.3 | 0.66 | 1.33 |
| Soybean | | | | |
| no. trifoliate leaves | -- | 2 | 4 | 6 |
| height (cm) | -- | 10 | 20 | 35 |
| Palmer amaranth | | | | |
| height (cm) | -- | 2 | 15 | 30 |
| infestation ($m^2$) | -- | 3 | 4 | 2 |
| Velvetleaf | | | | |
| height (cm) | -- | 3 | 10 | 30 |
| infestation ($m^2$) | -- | 5 | 5 | 3 |
| Common sunflower | | | | |
| height (cm) | -- | 5 | 15 | 25 |
| infestation ($m^2$) | -- | 2 | 2 | 2 |
| Green foxtail | | | | |
| height (cm) | -- | 1 | 6 | 20 |
| infestation ($m^2$) | -- | 2 | 2 | 2 |

Summary comments: Post treatments resulted in good to excellent control of broadleaves and grasses. Two of the three plots in which Glyphomax XRT was applied early and late post had to be replanted on June 16 due to poor initial stands. Results of the study are summarized in the following table. (Dept. of Agronomy and Horticulture, University of Nebraska-Lincoln)

**Table. Evaluation of glyphosate programs in soybeans (Horky and Martin).**

| | Application | | AMAPA | | | ABUTH | | | HELAN | | | SETVI | | | GLXMA YIELD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Treatment | Rate | Timing | 6/16 | 7/13 | 7/27 | 6/16 | 7/13 | 7/27 | 6/16 | 7/13 | 7/27 | 6/16 | 7/13 | 7/27 | 10/29 |
| | (lb/a) | | % Weed Control | | | | | | | | | | | | (bu/ac) |
| Flufenacet& | 0.18 | PRE/ | 93 | 83 | 99 | 78 | 73 | 99 | 68 | 90 | 99 | 98 | 91 | 99 | 40 |
| metribuzin/ | 0.27 | | | | | | | | | | | | | | |
| glyphosate[1]+ | 0.77 | MPOST | | | | | | | | | | | | | |
| AMS[2] | 2.55 | | | | | | | | | | | | | | |
| Flufenacet& | 0.28 | PRE/ | 88 | 82 | 99 | 77 | 65 | 99 | 70 | 82 | 99 | 95 | 87 | 99 | 36 |
| metribuzin/ | 0.07 | | | | | | | | | | | | | | |
| glyphosate[1]+ | 0.77 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Flufenacet+ | 0.6 | PRE/ | 90 | 91 | 99 | 83 | 80 | 99 | 78 | 93 | 99 | 98 | 98 | 99 | 37 |
| metribuzin/ | 0.375 | | | | | | | | | | | | | | |
| glyphosate[1]+ | 0.77 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Flumioxazin/ | 0.047 | PRE/ | 92 | 94 | 99 | 77 | 78 | 99 | 47 | 90 | 99 | 67 | 98 | 99 | 38 |
| glyphosate[1]+ | 0.77 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Flumioxazin/ | 0.063 | PRE/ | 93 | 99 | 99 | 83 | 90 | 99 | 58 | 96 | 99 | 75 | 98 | 99 | 38 |
| glyphosate[1]+ | 0.77 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Flumioxazin+ | 0.047 | PRE/ | 93 | 96 | 99 | 87 | 83 | 99 | 57 | 86 | 99 | 85 | 98 | 99 | 36 |
| flumetsulam/ | 0.025 | | | | | | | | | | | | | | |
| glyphosate[1]+ | 0.77 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Flumioxazin+ | 0.047 | PRE/ | 93 | 88 | 99 | 87 | 85 | 99 | 73 | 90 | 99 | 82 | 98 | 99 | 37 |
| cloransulam/ | 0.016 | | | | | | | | | | | | | | |
| glyphosate[1]+ | 0.77 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Glyphosate[1]+ | 0.77 | LPOST | 0 | 0 | 99 | 0 | 0 | 99 | 0 | 0 | 99 | 0 | 0 | 99 | 37 |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Glyphosate[1]+ | 0.77 | EPOST/ | 0 | 99 | 99 | 0 | 96 | 99 | 0 | 99 | 99 | 0 | 99 | 99 | 37 |
| AMS/ | 2.55 | | | | | | | | | | | | | | |
| glyphosate[1]+ | 0.77 | LPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| V10148[3]+ | 2 oz/a | PRE/ | 92 | 93 | 98 | 77 | 91 | 98 | 63 | 95 | 98 | 72 | 98 | 98 | 37 |
| V10149[4]/ | 1.5 oz/a | | | | | | | | | | | | | | |
| glyphosate[1]+ | 0.77 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Cloransulam+ | 0.016 | PRE/ | 95 | 94 | 99 | 88 | 86 | 99 | 78 | 98 | 99 | 83 | 96 | 99 | 40 |
| flumioxazin/ | 0.048 | | | | | | | | | | | | | | |
| glyphosate[5]+ | 0.56 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Cloransulam+ | 0.021 | PRE/ | 100 | 86 | 95 | 88 | 92 | 98 | 88 | 91 | 95 | 95 | 93 | 98 | 35 |
| flumioxazin/ | 0.064 | | | | | | | | | | | | | | |
| glyphosate[5]+ | 0.56 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |

(continued)

**Table. Evaluation of glyphosate programs in soybeans (Horky and Martin), continued.**

| | Application | | AMAPA | | | ABUTH | | | HELAN | | | SETVI | | | GLXMA YIELD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Treatment | Rate | Timing | 6/16 | 7/13 | 7/27 | 6/16 | 7/13 | 7/27 | 6/16 | 7/13 | 7/27 | 6/16 | 7/13 | 7/27 | 10/29 |
| | (lb/a) | | % Weed Control | | | | | | | | | | | | (bu/ac) |
| Flumetsulam+ | 0.033 | PRE/ | 97 | 93 | 99 | 93 | 82 | 99 | 55 | 95 | 99 | 92 | 96 | 99 | 38 |
| flumioxazin/ | 0.048 | | | | | | | | | | | | | | |
| glyphosate[5]+ | 0.56 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Glyphosate[5]+ | 0.75 | MPOST | 0 | 98 | 99 | 0 | 94 | 99 | 0 | 96 | 99 | 0 | 96 | 99 | 39 |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Cloransulam/ | 0.016 | PRE/ | 82 | 68 | 94 | 83 | 83 | 98 | 82 | 87 | 96 | 33 | 85 | 98 | 34 |
| glyphosate[5]+ | 0.56 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Pendimethalin+ | 1.24 | PRE | 83 | 86 | 96 | 83 | 85 | 98 | 82 | 85 | 99 | 88 | 95 | 99 | 34 |
| cloransulam/ | 0.016 | | | | | | | | | | | | | | |
| glyphosate[5]+ | 0.56 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| Glyphosate[5]+ | 0.75 | EPOST/ | 0 | 55 | 88 | 0 | 60 | 93 | 0 | 53 | 99 | 0 | 75 | 86 | 27 |
| AMS/ | 2.55 | | | | | | | | | | | | | | |
| glyphosate[5]+ | 0.75 | LPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| S-metolachlor& | 0.98 | PRE | 100 | 85 | 88 | 77 | 75 | 80 | 75 | 73 | 70 | 95 | 95 | 96 | 38 |
| metribuzin | 0.23 | | | | | | | | | | | | | | |
| S-metolachlor& | 0.82 | PRE/ | 100 | 85 | 96 | 78 | 75 | 96 | 77 | 75 | 99 | 98 | 93 | 96 | 35 |
| metribuzin/ | 0.195 | | | | | | | | | | | | | | |
| glyphosate[6]+ | 0.78 | MPOST | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| S-metolachlor& | 0.98 | PRE/ | 100 | 83 | 99 | 77 | 83 | 98 | 72 | 86 | 99 | 97 | 96 | 98 | 34 |
| metribuzin/ | 0.23 | | | | | | | | | | | | | | |
| glyphosate[7]+ | 0.78 | MPOST | | | | | | | | | | | | | |
| NIS[8]+ | 0.25% v/v | | | | | | | | | | | | | | |
| AMS | 2.55 | | | | | | | | | | | | | | |
| LSD (P=.05) | | | 3 | 16 | 11 | 4 | 17 | 8 | 5 | 14 | 11 | 5 | 12 | 9 | 7 |

[1]Glyphosate = 'Roundup Weathermax' by Monsanto

[2]AMS = 'N-PAK' by Agriliance

[3]V10148 = Rate is oz/a because formulation is unknown

[4]V10149 = Rate is oz/a because formulation is unknown

[5]Glyphosate = 'Glyphomax XRT' by Dow Agriscience

[6]Glyphosate = 'Touchdown Total' by Syngenta

[7]Glyphosate = 'Touchdown HiTech' by Syngenta

[8]NIS = 'Preference' by Agriliance