# EVALUATING POTENTIAL NEW HERBICIDES FOR SWEET CORN--2014

Robin R. Bellinder, Horticulture Section
CALS School of Integrative Plant Science, Cornell University, Ithaca, NY

The primary focus of the herbicide trial in 2014 was to evaluate crop tolerance to four relatively new products. Acetochlor products (Dow Agro—Surpass NXT, Monsanto--Harness) were registered for sweet corn in New York in 2014 and manufacturers of pyroxasulfone have indicated their interest in expanding registrations into sweet corn. Thus, weed scientists in multiple states are evaluating this herbicide. Additionally, two very new herbicides, GWN-10293 and A-16003 are in the very initial stages of phytotoxicity testing. Pyroxasulfone and acetochlor are in the same class of herbicides as s-metolachlor (Dual Magnum) and dimethenamid (Outlook) and have preemergence activities. The chemistries of GWN-10293 and A-16003 are not yet identified but they have both preemergence and post-emergence activities.

This was a difficult growing season. Cool, wet conditions in June led to there being standing water in portions of the trial and several plots had to be dropped. This would be expected to increase crop injury, however despite this, injury with the new products was overall very minor. It occurred with the high rates of Zidua, Harness, and A-16003 applied preemergence (Table 1) and with the high rate of A-16003 applied postemergence. Yields, both in numbers and weights, did not differ from the standard herbicide, Dual Magnum. Overall weed control was excellent with both Zidua and Harness with both low and high rates. With GWN-10293 and A-16003 the lower rates provided only modest control. When applied POST weed control was better with A-16003 than with GWN-10293. Due to the relatively good crop tolerance to these herbicides it is probable that the rates could be raised somewhat and this might improve weed control. More will be done with these products in 2015.

**Evaluating New Herbicides for Sweet Corn 2014**

| Trt | Treatment | Form/ Type | Rate | Growth Stage | Crop Stunting (%) | | Yield 9/19/2014 | | Weed Control (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 7/7/14 | 8/1/14 | #/50ft | lbs/150ft$^2$ | AMARE | POROL | CHEAL | GASCI |
| 1 | Dual-Magnum | 7.6 EC | 1pt | PRE | 0 | 0 | 64 | 66 | 93 | 83 | 89 | 98 |
| 2 | Dual-Magnum | 7.6 EC | 1.4pt | PRE | 0 | 0 | 68 | 68 | 98 | 94 | 91 | 99 |
| 3 | Zidua | 85 WG | 1.4 oz | PRE | 0 | 14 | 65 | 66 | 96 | 96 | 93 | 85 |
| 4 | Zidua | 85 WG | 2.1 oz | PRE | 23 | 15 | 63 | 62 | 99 | 97 | 95 | 92 |
| 5 | Harness | 7 EC | 11.5 oz | PRE | 0 | 0 | 61 | 68 | 99 | 92 | 93 | 99 |
| 6 | Harness | 7 EC | 15.3 oz | PRE | 13 | 10 | 62 | 66 | 99 | 94 | 97 | 98 |
| 7 | GWN-10293 | 50 WG | 1.1 oz | PRE | 0 | 0 | 71 | 71 | 50 | 43 | 73 | 53 |
| 8 | GWN-10293 | 50 WG | 2.2 oz | PRE | 0 | 0 | 67 | 70 | 90 | 85 | 83 | 65 |
| 9 | GWN-10293 | 50 WG | 1.1 oz | PST | 0 | 0 | 70 | 71 | 88 | 55 | 82 | 75 |
| | NIS 0.25% | | | | | | | | | | | |
| 10 | GWN-10293 | 50 WG | 2.2 oz | PST | 11 | 3 | 67 | 69 | 86 | 85 | 97 | 94 |
| | NIS 0.25% | | | | | | | | | | | |
| 11 | A-16003 | 1.67 L | 3.4 oz | PRE | 0 | 0 | 69 | 68 | 98 | 60 | 90 | 85 |
| 12 | A-16003 | 1.67 L | 2.5 oz | PRE | 10 | 5 | 65 | 66 | 84 | 48 | 90 | 60 |
| 13 | A-16003 | 1.67 L | 2.5 oz | PST | 0 | 0 | 66 | 69 | 99 | 94 | 99 | 99 |
| | NIS 0.25% | | | | | | | | | | | |
| 14 | A-16003 | 1.67 L | 3.4 oz | PST | 0 | 3 | 67 | 69 | 99 | 99 | 99 | 99 |
| | NIS 0.25% | | | | | | | | | | | |
| LSD (P=.05) | | | | | | | 11 | 8 | 6 | 18 | 8 | 13 |

AMARE=redroot pigweed; POROL=common purslane; CHEAL=common lambsquarters; GASCI=hairy galinsoga