

Wild oat control in spring wheat with reduced rates of Puma, Axial XL, Wolverine, and GoldSky at Crookston, MN - 2009. Durgan, Beverly R., Jochum Wiersma, Jim Cameron, and Douglas W. Miller. This experiment was designed to evaluate wild oat control with Puma (fenoxaprop & safener), Axial XL (pinoxaden & adjuvant), Wolverine (fenoxaprop & pyrasulfotole & bromoxynil) and GoldSky (pyroxsulam & fluroxypyr & florasulam) applied at the labeled rate and at two reduced rates and at two application times. The experiment was conducted at Crookston, MN on a Donaldson and Wheaton loam soil. Following weedy fallow, the experimental area received 100 lb/A of N and was plowed in the fall. In the spring of the following year, the experimental area was disked and harrowed. 'Freyr' hard red spring wheat was seeded on May 18 at 1.5 Bu/A. The experimental design was a randomized complete block with treatments in a split plot arrangement with three replications. Application date comprised whole plots and herbicide treatments, subplots. Subplot size was 10 by 16 ft. All herbicide treatments were applied with a backpack type sprayer delivering 10 gpa at 30 psi using 80015 flat fan nozzles. Application data and environmental conditions are listed below. Crop injury and wild oat control were rated visually. Yields were measured. All data are presented in the table below.

| Treatment Date | June 10 | June 18 |
|--------------------------------|----------------|----------------|
| Target wild oat stage | 3 leaf | 5 leaf |
| Air temperature (°F) | 57 | 78 |
| Soil temperature (°F) | 60 | 70 |
| Relative humidity (%) | 61 | 57 |
| Wind | W 5 mph | W 2 mph |
| Rainfall before Application | | |
| Week 1 (inch) | 0.42 | 0.40 |
| Rainfall after Application | | |
| Week 1 (inch) | 0.40 | 0.45 |
| Week 2 (inch) | 0.45 | 3.28 |

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| Treatment | Rate | Wild Oat Control | | | Wheat Injury | | | | Wheat Yield (Bu/A) |
|---------------------------------|-------------|------------------|-----|------|--------------|------|-----|------|-----------------------|
| | | 6/26 | 7/9 | 7/23 | 6/19 | 6/26 | 7/9 | 7/23 | |
| | Product/A | (%) | (%) | (%) | (%) | (%) | (%) | (%) | |
| Application #1 (June 10) | | | | | | | | | |
| Puma | 0.67 pt | 98 | 99 | 93 | 0 | 0 | 0 | 0 | 64 |
| Puma | 0.5 pt | 92 | 93 | 92 | 0 | 0 | 0 | 0 | 71 |
| Puma | 0.33 pt | 90 | 87 | 85 | 0 | 0 | 0 | 0 | 63 |
| Axial XL | 16.2 oz | 99 | 94 | 95 | 0 | 0 | 0 | 0 | 72 |
| Axial XL | 12.2 oz | 96 | 93 | 93 | 0 | 0 | 0 | 0 | 68 |
| Axial XL | 8.1 oz | 93 | 90 | 91 | 0 | 0 | 0 | 0 | 70 |
| Wolverine | 24.7 oz | 96 | 93 | 89 | 0 | 0 | 0 | 0 | 72 |
| Wolverine | 20.5 oz | 92 | 90 | 92 | 0 | 0 | 0 | 0 | 77 |
| Wolverine | 13.7 oz | 85 | 82 | 86 | 0 | 0 | 0 | 0 | 69 |
| GoldSky + Preference | 16 oz + 3.2 | 87 | 92 | 95 | 0 | 0 | 0 | 0 | 71 |
| GoldSky + Preference | 12 oz + 3.2 | 87 | 87 | 91 | 0 | 0 | 0 | 0 | 65 |
| GoldSky + Preference | 8 oz + 3.2 | 80 | 73 | 85 | 0 | 0 | 0 | 0 | 70 |
| Weedy Check | -- | -- | -- | -- | 0 | 0 | 0 | 0 | 9 |
| Application #2 (June 18) | | | | | | | | | |
| Puma | 0.67 pt | -- | 99 | 96 | 0 | 0 | 0 | 0 | 46 |
| Puma | 0.5 pt | -- | 92 | 93 | 0 | 0 | 0 | 0 | 58 |
| Puma | 0.33 pt | -- | 88 | 82 | 0 | 0 | 0 | 0 | 38 |
| Axial XL | 16.2 oz | -- | 98 | 98 | 0 | 0 | 0 | 0 | 59 |
| Axial XL | 12.2 oz | -- | 88 | 95 | 0 | 0 | 0 | 0 | 54 |
| Axial XL | 8.1 oz | -- | 82 | 93 | 0 | 0 | 0 | 0 | 51 |
| Wolverine | 24.7 oz | -- | 96 | 93 | 0 | 0 | 0 | 0 | 49 |
| Wolverine | 20.5 oz | -- | 82 | 92 | 0 | 0 | 0 | 0 | 52 |
| Wolverine | 13.7 oz | -- | 83 | 86 | 0 | 0 | 0 | 0 | 45 |
| GoldSky + Preference | 16 oz + 3.2 | -- | 82 | 96 | 0 | 0 | 0 | 0 | 56 |
| GoldSky + Preference | 12 oz + 3.2 | -- | 73 | 95 | 0 | 0 | 0 | 0 | 50 |
| GoldSky + Preference | 8 oz + 3.2 | -- | 70 | 94 | 0 | 0 | 0 | 0 | 56 |
| Weedy Check | -- | -- | -- | -- | 0 | 0 | 0 | 0 | 7 |
| LSD (0.05) | | 10 | 12 | 5 | ns | ns | ns | ns | 9 |

Puma 1EC = fenoxaprop and safener.

Axial XL 0.42 EC = pinoxaden and adigor adjuvant.

Wolverine 1.38E = fenoxaprop-p-ethyl (0.38 lb ai/gal) & pyrasulfotole (0.17 lb ai/gal) & bromoxynil octanoate (0.41 lb ai/gal) & bromoxynil heptanoate (0.42 lb ai/gal).

GoldSky 1.53L = pyroxsulam (0.11 lb ai/gal) & fluroxypyr (0.71 lb ae/gal) & florasulam (0.018 lb ai/gal).

Preference = nonionic surfactant.