

Broadleaf weed control in spring wheat at Crookston, MN - 2016. Durgan, Beverly R., Jochum J. Wiersma, Jim Cameron, and Douglas Miller. This experiment was designed to evaluate broadleaf weed control and wheat injury with broadleaf herbicides applied at two application times. The experiment was conducted at Crookston, MN on a Donaldson and Wheaton loam soil. Following weedy fallow, the standing residue was shredded and, after receiving 115 lbs/A as urea, was chisel plowed in the fall of 2015. In the spring of 2016, a seed bed was prepared using a field cultivar with rolling baskets. 'Linkert' hard red spring wheat was seeded on April 12 at 1.8 Bu/A. All herbicide treatments were applied with a backpack type sprayer delivering 10 gpa at 30 psi using 80015 flat fan nozzles. The experimental design was a randomized complete block with three replications and plot size was 10 by 24 ft. Application date and environmental conditions are listed below. Crop injury and weed control were visually rated and yields were measured. Data presented in the table below.

| Treatment Date | May 17 | May 24 |
|--------------------------------|---------------|---------------|
| Target Wheat Stage | 2-4 leaf | 5-6 leaf |
| Air temperature (°F) | 61 | 68 |
| Soil temperature (°F) | 51 | 72 |
| Relative humidity (%) | 32 | 57 |
| Wind | E 5 mph | SE 1 mph |
| Sky | clear | clear |
| Rainfall before Application | | |
| Week 1 (inch) | 0.09 | 1.35 |
| Rainfall after Application | | |
| Week 1 (inch) | 1.35 | 5.24 |
| Week 2 (inch) | 5.24 | 0.79 |

Results

Weed control was good to excellent for all treatments and generally did not significantly differ. PerfectMatch caused the greatest injury (stunting), in particular at the earlier application timing. Yields did not differ significantly.

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| Treatment | Rate | Weed Control | | | | | | | | | | | | | | | | | | | | | | | | Wheat Injury | | | | | Wheat | |
|------------------------------------|-----------------------------|-------------------------|-----|------|------|------|----------------------------|-----|------|------|------|--------------------|-----|------|------|------|-------------------|-----|------|------|-----------------|------|-----|------|------|--------------|------|------|-----|------|--------|------|
| | | Common Lambsquarters | | | | | Nightflowering Catchfly | | | | | Redroot Pigweed | | | | | Wild Buckwheat | | | | Wild Mustard | | | | | Yield | | | | | | |
| | | 5/27 | 6/9 | 6/16 | 6/30 | 7/20 | 5/27 | 6/9 | 6/16 | 6/30 | 7/20 | 5/27 | 6/9 | 6/16 | 6/30 | 7/20 | 5/27 | 6/9 | 6/16 | 6/30 | 7/20 | 5/27 | 6/9 | 6/16 | 6/30 | | 7/20 | 5/27 | 6/9 | 6/16 | 6/30 | 7/20 |
| Application #1 (May 17) | | (Product/A) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (Bu/A) | |
| Talinor + CoAct+ + COC | 13.7 oz + 2.74 oz + 12.8 oz | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 90 | 94 | 94 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 90 | 96 | 96 | 99 | 99 | 99 | 99 | 99 | 0 | 0 | 2 | 0 | 0 | 93 |
| Talinor + CoAct+ + COC | 16 oz + 3.2 oz + 12.8 oz | 99 | 98 | 99 | 99 | 99 | 99 | 93 | 90 | 93 | 94 | 99 | 99 | 99 | 99 | 99 | 99 | 98 | 92 | 93 | 94 | 99 | 99 | 99 | 99 | 99 | 0 | 0 | 0 | 0 | 0 | 90 |
| Talinor + CoAct+ + COC | 18.2 oz + 3.6 oz + 12.8 oz | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 88 | 95 | 93 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 92 | 93 | 93 | 99 | 99 | 99 | 99 | 99 | 0 | 2 | 0 | 0 | 0 | 88 |
| Huskie + Preference | 11 oz + 3.2 oz | 99 | 99 | 99 | 99 | 99 | 99 | 93 | 88 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 95 | 90 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 0 | 0 | 0 | 0 | 0 | 87 |
| Widematch | 1 pt | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 87 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 92 | 98 | 96 | 99 | 99 | 99 | 99 | 99 | 2 | 0 | 0 | 0 | 0 | 92 |
| Affinity Tankmix + MCPA ester | 0.6 oz + 0.75 pt | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 90 | 96 | 96 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 90 | 96 | 98 | 99 | 99 | 99 | 99 | 99 | 5 | 2 | 3 | 0 | 0 | 88 |
| Huskie + N-Pak AMS | 11 oz + 1.18 pt | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 93 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 95 | 98 | 96 | 99 | 99 | 99 | 99 | 99 | 0 | 0 | 0 | 0 | 0 | 87 |
| PerfectMatch + Activator 90 + AMS | 1 pt + 6.4 oz + 3.5 pt | 99 | 98 | 99 | 99 | 99 | 99 | 93 | 92 | 98 | 96 | 99 | 99 | 99 | 99 | 99 | 99 | 93 | 93 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 30 | 20 | 15 | 3 | 3 | 87 |
| Hat Trick | 1.5 pt | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 90 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 95 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 3 | 2 | 3 | 0 | 0 | 87 |
| Application #2 (May 24) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AGH 15004 | 1 pt | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 85 | 90 | 90 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 92 | 95 | 95 | 99 | 99 | 99 | 99 | 99 | 0 | 3 | 3 | 0 | 0 | 89 |
| AGH 15004 + Preference + Interlock | 1 pt + 3.2 oz + 4 oz | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 83 | 95 | 91 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 88 | 96 | 99 | 99 | 99 | 99 | 99 | 99 | 2 | 7 | 3 | 0 | 0 | 89 |
| AGH 15004 + AG 8050 | 1 pt + 6.4 oz | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 78 | 88 | 90 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 90 | 96 | 96 | 99 | 99 | 99 | 99 | 99 | 0 | 5 | 0 | 0 | 0 | 86 |
| AGH 15004 + AG 14039 | 1 pt + 6.4 oz | 99 | 98 | 99 | 99 | 99 | 99 | 90 | 83 | 93 | 93 | 99 | 98 | 99 | 99 | 99 | 99 | 90 | 92 | 93 | 96 | 99 | 99 | 99 | 99 | 99 | 0 | 5 | 3 | 0 | 0 | 89 |
| AGH 15004 | 1.5 pt | 99 | 98 | 99 | 99 | 99 | 99 | 90 | 90 | 96 | 94 | 99 | 98 | 99 | 99 | 99 | 99 | 90 | 95 | 96 | 96 | 99 | 99 | 99 | 99 | 99 | 0 | 7 | 3 | 0 | 0 | 90 |
| AGH 15004 + Preference + Interlock | 1.5 pt + 3.2 oz + 4 oz | 99 | 98 | 99 | 99 | 99 | 99 | 96 | 87 | 94 | 94 | 99 | 98 | 99 | 99 | 99 | 99 | 97 | 93 | 96 | 96 | 99 | 99 | 99 | 99 | 99 | 0 | 5 | 3 | 2 | 3 | 87 |
| AGH 15004 + AG 8050 | 1.5 pt + 6.4 oz | 99 | 98 | 99 | 99 | 99 | 99 | 90 | 88 | 96 | 96 | 99 | 98 | 99 | 99 | 99 | 99 | 90 | 93 | 96 | 98 | 99 | 99 | 99 | 99 | 99 | 2 | 5 | 3 | 0 | 0 | 86 |
| AGH 15004 + AG 14039 | 1.5 pt + 6.4 oz | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 85 | 93 | 93 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 93 | 96 | 96 | 99 | 99 | 99 | 99 | 99 | 0 | 5 | 5 | 0 | 0 | 87 |
| Huskie + N-Pak AMS | 13.5 oz + 1.18 pt | 99 | 98 | 99 | 99 | 99 | 99 | 96 | 90 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 92 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 5 | 0 | 0 | 0 | 0 | 87 |
| Widematch + MCPA Ester | 1 pt + 0.5 pt | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 90 | 96 | 94 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 90 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 2 | 3 | 0 | 0 | 0 | 88 |
| Affinity Tankmix + Preference | 0.6 oz + 3.2 oz | 99 | 96 | 99 | 99 | 99 | 99 | 96 | 93 | 96 | 94 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 95 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 5 | 2 | 0 | 2 | 2 | 89 |
| PerfectMatch + Activator 90 + AMS | 1 pt + 6.4 oz + 3.5 pt | 99 | 95 | 99 | 99 | 99 | 99 | 90 | 90 | 99 | 99 | 99 | 98 | 99 | 99 | 99 | 99 | 93 | 95 | 99 | 99 | 99 | 96 | 99 | 99 | 99 | 12 | 10 | 10 | 5 | 7 | 86 |
| Hat Trick | 1.5 pt | 99 | 99 | 99 | 99 | 99 | 99 | 93 | 92 | 99 | 98 | 99 | 99 | 99 | 99 | 99 | 99 | 93 | 93 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 5 | 2 | 2 | 0 | 0 | 89 |
| Weedy Check | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 82 |
| LSD (0.05) | | ns | ns | ns | ns | ns | ns | ns | 7 | ns | ns | ns | ns | ns | ns | ns | ns | 6 | ns | ns | ns | ns | ns | ns | ns | ns | 4 | 5 | 3 | 2 | 3 | ns |

Talinor = bicyclopyrone & bromoxynil.
 CoAct+ = adjuvant.
 COC = crop oil concentrate.
 Huskie 2.08 EC = pyrasulfotole (0.23 lb ai/gal) & bromoxynil 1.85 lb ai/gal) & safener.
 Preference = nonionic surfactant.
 Widematch 1.5E = clopyralid (0.75 lb ae/gal) & fluroxypyr (0.75 lb ae/gal).
 Affinity Tankmix 50SG = thifensulfuron (40%) & tribenuron (10%).
 MCPA Ester 4E.
 N-Pak AMS = 34% ammonium sulfate solution (3.4 lbs ammonium sulfate/gal).
 PerfectMatch 1.61SE = clopyralid (0.75 lb ae/gal) & fluroxypyr (0.75 lb ae/gal) & pyroxsulam (0.11 lb ai/gal).
 Activator 90 = nonionic surfactant.
 Hat Trick 2.82SE= clopyralid (0.51 lb ae/gal) & fluroxypyr (0.51 lb ae/gal) & MCPA ester (1.8 lb ae/gal).
 AGH 15004 = experimental from Winfield Solutions.
 Interlock = drift control agent.
 AGH 8050 = experimental from Winfield Solutions.
 AGH 14039 = experimental from Winfield Solutions.