



## What is in those premix herbicides?

### Relative effectiveness of soil-applied herbicides for broadleaf weed control.

Ratings are based on labeled application rates for the soil type and timely rainfall or irrigation to incorporate the herbicides. Ratings are also based on weed control 3 to 4 weeks after application. Length of effective control (residual control) beyond 4 weeks after application often declines. Results may differ with variations in soil type, temperature, rainfall, soil moisture, soil organic matter, and soil pH. For ratings on herbicide combinations not listed, see the component parts.

Weed control ratings: 10 = 95–100%; 9 = 85–95%; 8 = 75–85%; 7 = 65–75%; 6 = 55–65%; N = less than 55% or no control

Broadleaves	Site of Action Number	Amaranth, Palmer/Waterhemp <sup>1</sup>	Anoda, Spurred	Burcucumber	Cocklebur	Horseweed/Marestail <sup>1</sup>	Jimsonweed	Lambsquarters <sup>2</sup>	Morningglory, Annual	Nightshade, Eastern Black	Pigweed <sup>2</sup>	Ragweed, Common <sup>3</sup>	Ragweed, Giant	Sida, Prickly	Smartweed	Velvetleaf	Soybean Tolerance, Medium Soils	Soybean Tolerance, Coarse Soils
Trade Name*																		
Classic	2	6	N	N	8+	8+ <sup>1</sup>	6	9	7	N	9	7 <sup>3</sup>	6	8	8	8+	E	VG
Dual / Cinch	15	8+	N	N	N	N	N	6	N	7+	8	6	N	N	N	N	E	E
FirstRate	2	6	9	N	8+	8+ <sup>1</sup>	8	9	8	N	9 <sup>2</sup>	9 <sup>3</sup>	8	7	8	8+	E	E
Metribuzin	5	9	7	6	8	8+	8	6	N	N	6	7	N	8+	9	8	G	FG
Reflex	14	9	N	N	8	N	8	8	7	8	9	9	6	7	7	6	E	VG
Spartan	14	9	N	N	N	8+	6	8+	9	8	9	7	6	6	7	8	VG	VG
Valor	14	9	8	N	6	8+	8	9	7+	9	9	8+	6	8	7	7	G	F

<sup>1</sup> Biotypes resistant to Group 2 herbicides are common in the region; do not rely on Group 2 herbicides to provide effective control.

<sup>2</sup> Triazine-resistant (Group 5) lambsquarters and pigweed are common in the region; metribuzin will not control these biotypes.

<sup>3</sup> Common ragweed biotypes resistant to Group 2 herbicides have been confirmed.

### Selected single active ingredient herbicides.

Single active product	Herbicide	Site of action number	Product rate (per acre)	Herbicide rate (lbs ai per acre)	Duration of weed control
Classic	chlorimuron	2	2.0 oz	0.031	4-5 weeks
Dual / Cinch	S-metolachlor	15	1.33 pt	1.27	4-5 weeks
FirstRate	chloransulam	2	0.6 oz	0.031	2-4 weeks
metribuzin	metribuzin	5	8 oz	0.375	4-5 weeks
Reflex	fomesafen	14	1.5 pt	0.375	2-4 weeks
Spartan	sulfentrazone	14	8 fl oz	0.25	4-6 weeks
Valor SX	flumioxazin	14	2.5 oz	0.08	4-5 weeks

**Selected soybean herbicide prepackaged mixes, or co-packs, and equivalents.**

Trade Name	If You Apply (per acre)	You Have Applied (ai or ae lb/A)	An Equivalent Tank Mixture of	Site of Action Number
Authority Elite 7SE or BroadAxe	28 fl oz	0.153 sulfentrazone	4.9 fl oz Spartan 4L	14
		1.38 S-metolachlor	1.45 pt Dual Magnum 7.62EC	15
Authority First 70DF	6.45 oz	0.25 sulfentrazone	8 fl oz Spartan 4F	14
		0.032 cloransulam	0.6 oz FirstRate 84WDG	2
Authority MTZ 45DF	16 oz	0.18 sulfentrazone	5.76 fl oz Spartan 4F	14
		0.27 metribuzin	5.8 oz metribuzin 75DF	5
Authority XL 70WG	7 oz	0.27 sulfentrazone	8.64 fl oz Spartan 4F	14
		0.035 chlorimuron	2.24 oz Classic 25DF	2
Boundary 6.5L	2 pt	1.24 S-metolachlor	1.3 pt Dual Magnum 7.62EC	15
		0.314 metribuzin	6.7 oz metribuzin 75DF	5
Canopy 75DF	5 oz	0.033 chlorimuron	2.14 oz Classic 25DF	2
		0.2 metribuzin	4.27 oz metribuzin 75DF	5
Canopy Blend 58.3DG	6.5	0.033 chlorimuron	2.14 oz Classic 25DF	2
		0.2 metribuzin	4.27 oz metribuzin 75DF	5
Canopy EX 29.5WDG	2.2 oz	0.031 chlorimuron	2 oz Classic 25DF	2
		0.009 tribenuron	0.2 oz Express 75DF	2
Envive 41.3WDG	5.3 oz	0.094 flumioxazin	3 oz Valor SX 51WDG	14
		0.009 oz thifensulfuron	0.2 oz Harmony 75DF	2
		0.031 chlorimuron	1.9 oz Classic 25DF	2
Fierce 76WDG	3 oz	0.063 flumioxazin	2 oz Valor SX 51WDG	14
		0.08 pyroxasulfone	1.5 oz Zidua 85WDG	15
Fierce XLT 62.41 WDG	4 oz	0.078 pyroxasulfone	1.47 oz Zidua 85WDG	15
		0.061 flumioxazin	1.93 oz Valor SX 51WDG	14
		0.017 chlorimuron	1.07 oz Classic 25DF	2
Flexstar GT3.5L	4.5 pt	0.315 fomesafen	1.3 pt Reflex 2E	14
		1.28 lb ae glyphosate	1.3 qt Touchdown Total 4.17S	9
Gangster CoPack	3 oz	0.080 flumioxazin	2.5 oz Valor SX 51WDG	14
		0.026 cloransulam	0.5 oz FirstRate 84WDG	2
Panther Pro 4.23SC	12 fl oz	0.28 metribuzin	5.97 oz metribuzin 75DF	5
		0.063 flumioxazin	1.98 oz Valor SX 51WDG	14
		0.053 imazethapyr	3.39 fl oz Pursuit 2L	2
Prefix 5.3EC	2 pt	1.05 S-metolachlor	1.1 pt Dual Magnum 7.62EC	15
		0.24 fomesafen	0.95 pt Reflex 2E	14
Sonic 70DF	6.45 oz	0.25 sulfentrazone	5.28 oz Authority 75DF	14
		0.032 cloransulam	0.6 oz FirstRate 84WDG	2
Surveil 48WDG	3.5 oz	0.080 flumioxazin	2.5 oz Valor SX 51WDG	14
		0.026 cloransulam	0.5 oz FirstRate 84WDG	2
Synchrony XP 28.4WDG	0.375 oz	0.005 chlorimuron	0.32 oz Classic 25DF	2
		0.0014 thifensulfuron	0.03 oz Harmony 75DF	2
Trivence 61.3WDG	8 oz	0.02 chlorimuron	1.25 oz Classic 25DF	2
		0.064 flumioxazin	2.0 oz Valor 51WDG	14
		0.22 metribuzin	4.7 oz metribuzin 75DF	5
Valor XLT 40.3WDG or Rowel FX	3.5 oz	0.065 flumioxazin	2.1 oz Valor SX 51WDG	14
		0.022 chlorimuron	1.44 oz Classic 25DF	2
Warrant Ultra 3.45CS	3 pt	1.06 acetochlor	2.8 pt Warrant 3CS	15
		0.24 fomesafen	15 fl oz Reflex 2E	14

	Recommended rate when applied alone
	Slightly less than recommended rate when applied alone but potentially acceptable depending on soil texture
	Less than recommended rate when applied alone
	Insufficient rate when applied alone
	Resistance to this site of action is common in Palmer amaranth, common ragweed, and horseweed/marestail

**For more information, consult:**

- The 2018 Field Crops Pest Management Guide (Virginia Cooperative Extension Publication ENTO-239-2): [http://pubs.ext.vt.edu/content/dam/pubs\\_ext\\_vt\\_edu/456/456-016/ENTO-239-2.pdf](http://pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/456/456-016/ENTO-239-2.pdf)
- The Mid-Atlantic Field Crop Weed Management Guide: <http://extension.udel.edu/ag/weed-science/weed-management-guides/>.