

**HERBICIDE TRADE NAME, COMMON NAME, FORMULATION, MODE (SITE) OF ACTION, AND MANUFACTURER, ORDERED BY WSSA SITE OF ACTION**

Trade Name	Common Name	Formulation <sup>1</sup>	Resistance Management Site of Action <sup>2</sup>		Manufacturer
			WSSA	HRAC	
Acclaim Extra	fenoxaprop	0.57 E	1	A	Bayer
Assure II	quizalofop	0.88 EC	1	A	DuPont
Axial	penoxaden	0.83 EC	1	A	Syngenta
Clincher SF	cyhalofop	2.38 L	1	A	Dow AgroSciences
Envoy	clethodim	0.94 EC	1	A	Valent
Fusilade DX	fluazifop	2 EC	1	A	Syngenta
Hoelon	diclofop	3 EC	1	A	Bayer
Illoxan	diclofop	3 EC	1	A	Bayer
Ornamec	fluazifop-P	0.5 EC	1	A	PBI Gordon
Poast	sethoxydim	1.5 EC	1	A	Microflo
Poast Plus	sethoxydim	1 EC	1	A	Microflo
Ricestar HT	fenoxaprop	0.58 EW	1	A	Bayer
Select	clethodim	2 EC	1	A	Valent
Targa	quizalofop	0.88 EC	1	A	Gowan
Vantage	sethoxydim	1 EC	1	A	BASF; Microflo
Accent Q	nicosulfuron	54.5 DF	2	B	DuPont
Ally XP	metsulfuron	60 DF	2	B	DuPont
Arsenal A.C.	imazapyr	4 AC	2	B	BASF
Beacon	primisulfuron	75 DF	2	B	Syngenta
Beyond	imazamox	1 S	2	B	BASF
Cadre	imazapic	70 DG	2	B	BASF
Certainty	sulfosulfuron	75 DF	2	B	Monsanto
Chopper	imazapyr	2 S	2	B	BASF
Cimarron Plus	metsulfuron + chlor-sulfuron (48% + 15%)	63 DF	2	B	DuPont
Classic	chlorimuron	25 DF	2	B	DuPont
Corsair	chlorsulfuron	75 WDG	2	B	Nufarm
Crusher	rimsulfuron + thifensulfuron	50 DF	2	B	Cheminova
Envoke	trifloxysulfuron	75 DG	2	B	Syngenta
Escort	metsulfuron	60 DF	2	B	DuPont
Express	tribenuron	50 SG	2	B	DuPont
FirstRate	cloransulam	84 DF	2	B	Dow AgroSciences
Grasp	penoxsulam	2 EC	2	B	Dow AgroSciences
Habitat	imazapyr	2.0 lb/gal	2	B	BASF
Halo Max 75	halosulfuron	75 WG	2	B	Aceto
Harmony SG	thifensulfuron	50 DF	2	B	DuPont
Image	imazaquin	1.5 EC	2	B	BASF

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			WSSA	HRAC	
League	imazosulfuron	75 WG	2	B	Valent
Londax	bensulfuron	60 DF	2	B	RiceCo
Manor	metsulfuron	60 WDG	2	B	Nufarm; Riverdale
Matrix	rimsulfuron	25 DF	2	B	DuPont
Monument	trifloxysulfuron	75 WG	2	B	Syngenta
Newpath	imazethapyr	2 AS	2	B	BASF
Osprey	mesosulfuron	4.5 DF	2	B	Bayer
Oust	sulfometuron	75 WDG	2	B	DuPont
Outrider	sulfosulfuron	75 WP	2	B	Monsanto
Peak	prosulfuron	57 DG	2	B	Syngenta
Permit	halosulfuron	75 DG	2	B	Gowan
Plateau	imazapic	70 DG	2	B	BASF
Pursuit	imazethapyr	2 AS; 70 DG	2	B	BASF
Python	flumetsulam	80 WDG	2	B	Dow AgroSciences
Raptor	imazamox	1 AS	2	B	BASF
Regiment	bispyribac	80 DF	2	B	Valent
Resolve Q	rimsulfuron	25 DF	2	B	DuPont
Revolver	foramsulfuron	0.19 L	2	B	Bayer
Sandea	halosulfuron	75 DF	2	B	Gowan
Scepter	imazaquin	70 DG	2	B	AMVAC
Sedgehammer	halosulfuron	75 DF	2	B	Gowan
Stalker	imazapyr	2 SL	2	B	BASF
Staple LX	pyrithiobac	3.2 SL	2	B	DuPont
Strada	orthosulfamuron	50 WG	2	B	Isagro-USA
Strongarm	diclosulam	0.84 L	2	B	Dow AgroSciences
Synchrony XP	chlorimuron + thifensulfuron	28.4 XP (21.5 + 6.9%)	2	B	DuPont
Telar	chlorsulfuron	75 DF	2	B	DuPont
Balan	benefin	60 DF	3	K1	Dow AgroSciences
Barricade	prodiamine	65 WG	3	K1	Syngenta
Curbit	ethalfluralin	3 EC	3	K1	Platte Chemical
Dacthal	DCPA	75 WP; 6 L	3	K1	Amvac Chemical
Dimension	dithiopyr	2 EC	3	K1	Dow AgroSciences
Endurance	prodiamine	65 WDG	3	K1	Syngenta
Factor	prodiamine	65 WSG	3	K1	Syngenta
Kerb	pronamide	50 W	3	K1	Dow AgroSciences
Lesco PRE-M	pendimethalin	50 WP (others)	3	K1	Lesco
Pendimax	pendimethalin	3.3 EC	3	K1	Dow AgroSciences

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**Herbicide Trade Name, Common Name, Formulation, Mode (Site) of Action, and Manufacturer, Ordered By WSSA Site of Action [cont.]**

Trade Name	Common Name	Formulation <sup>1</sup>	Resistance Management Site of Action <sup>2</sup>		Manufacturer
			WSSA	HRAC	
Pendulum	pendimethalin	3.3 EC; 2 G; 60 WDG	3	K1	BASF
Pendulum AquaCap	pendimethalin	3.8 lb/gal	3	K1	BASF
Preen	trifluralin	1.47 G	3	K1	Lebanon Seaboard
Prowl	pendimethalin	3.3 EC	3	K1	BASF
Prowl H <sub>2</sub> O	pendimethalin	3.8 CS	3	K1	BASF
Regalkade	procliamine	0.5% G	3	K1	Regal
Sonalan	ethalfuralin	3 EC	3	K1	Dow AgroSciences
Surflan	oryzalin	4 EC	3	K1	Dow AgroSciences
Treflan	trifluralin	10 G	3	K1	Dow AgroSciences
Treflan HFP	trifluralin	4 EC	3	K1	Dow AgroSciences
2,4-D amine or ester	2,4-D	several	4	O	several
2,4-DB	2,4-DB	several	4	O	several
Banvel	dicamba	4 SL	4	O	Microflo
Banvel II	dicamba	2 SL	4	O	Microflo
Barrage HF	2,4-D ester	4.7 EC	4	O	Helena
Butoxone 200	2,4-DB	2 SL	4	O	Cedar Chemical
Butyrac 200	2,4-DB	2 SL	4	O	Albaugh
Clarity	dicamba	4 S	4	O	BASF
Drive	quinclorac	75 DF	4	O	BASF
Facet, Facet L	quinclorac	75 DF, 1.5 L	4	O	BASF
Forestry Garlon 4	triclopyr	4 SL	4	O	Dow AgroSciences
Formula 40	2,4-D	3.8 SL	4	O	Aventis
Garlon	triclopyr	4 L; 3 L	4	O	Dow AgroSciences
Grandstand R	triclopyr	3 SL	4	O	Dow AgroSciences
GrazonNext HL	aminopyralid + 2,4-D	3 lb/gal (0.33 + 2.67 lb/gal)	4	O	Dow AgroSciences
Latigo	2,4-D acid + dicamba acid	2.4 lb/gal + 1.8 lb/gal	4	O	Helena
Lontrel	clopyralid	3 L	4	O	Dow AgroSciences
MCP amine	MCPA	4 SL	4	O	Loveland; Platte
MCP	MCP	4 L	4	O	Verdicon
Mecomec	mecoprop	2.5 L	4	O	PBI Gordon
Milestone	aminopyralid	2 lb/gal	4	O	Dow AgroSciences
Opti-Amine	2,4-D	3.8 EC	4	O	Helena
PastureGard HL	triclopyr + fluroxypyr	1.5 + 0.5	4	O	Dow AgroSciences
Pathfinder II	triclopyr	0.75 SL	4	O	Dow AgroSciences
Remedy Ultra	triclopyr	4 SL	4	O	Dow AgroSciences

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			WSSA	HRAC	
Renovate	triclopyr	3.0 lb/gal	4	O	SePro
Status	dicamba	40% SL	4	O	BASF
Stinger	clopyralid	3 SL	4	O	Dow AgroSciences
Surmount	picloram + fluroxypyr	1.19 + 0.96	4	O	Dow AgroSciences
Tahoe 3A	triclopyr amine	3 SL	4	O	Nufarm
Tahoe 4E	triclopyr ester	4 EC	4	O	Nufarm
Tordon 22K	picloram	2 SL	4	O	Dow AgroSciences
Tordon K	picloram	2 SL	4	O	Dow AgroSciences
Transline	clopyralid	3 L	4	O	Dow AgroSciences
Turflon Ester	triclopyr	4 L	4	O	Dow AgroSciences
Unison	2,4-D	1.74 EC	4	O	Helena
Vanquish	dicamba	4 SL	4	O	Syngenta
Weedar 64	2,4-D	3.8 SL	4	O	Nufarm
Velpar	hexazinone	75 DF; 2 L	5	C1	DuPont
AAtrex	atrazine	4L, 90 DF	5	C1	Syngenta
Caparol	prometryn	80 DF; 4 L	5	C1	Syngenta
Hyvar X	bromacil	80 WP	5	C1	DuPont
Pramitol	prometon	25 E (25% active liquid)	5	C1	Agrilience
Princep	simazine	4 L; 90 DG	5	C1	Syngenta
Pronone	hexazinone	10 G; 2.5 G	5	C1	Proserve
Pyramin	pyrazon	65 DF	5	C1	Microflo
Spin-Aid	phenmedipham	1.3 L	5	C1	Bayer
Basagran	bentazon	4 SL	6	C3	Microflo
Basagran T/O	bentazon	4 SL	6	C3	Microflo
Buctril	bromoxynil	4 EC; 2 EC	6	C3	Bayer
Cotoran	fluometuron	4 L; 80 DF	7	C2	MANA
Direx	diuron	4 L	7	C2	MANA
Karmex	diuron	4 L; 80 DF	7	C2	MANA
Linex	linuron	4 L	7	C2	NovaSource
Spike	tebuthiuron	80 DF; 20 P	7	C2	Dow AgroSciences
Stam M4	propanil	4 L; 80 DF	7	C2	Dow AgroSciences
Super Wham	propanil	4 EC	7	C2	RiceCo
Tupersan	siduron	50 WP	7	C2	PBI Gordon; Gowan
Betamec	bensulide	4 EC	8	N	PBI Gordon
Betason	bensulide	4 EC	8	N	Platte
Bolero	thiobencarb	8 EC	8	N	Valent
Eptam	EPTC	7 EC	8	N	Syngenta
Lescosan	bensulide	4 L (others)	8	N	Lesco

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Trade Name	Common Name	Formulation <sup>1</sup>	Resistance Management Site of Action <sup>2</sup>		Manufacturer
			WSSA	HRAC	
Prefar	bensulide	4 E	8	N	Gowan
Pre-san	bensulide	7 G	8	N	PBI Gordon
Ro-Neet	cycloate	6 E	8	N	Helm
Accord Concentrate	glyphosate	4 SL (acid eq.)	9	G	Dow AgroSciences
glyphosate formulations	glyphosate	various	9	G	various
Roundup formulations	glyphosate	various	9	G	Monsanto
Touchdown HiTech	glyphosate	4.5 SL (acid eq.)	9	G	Syngenta
Touchdown IQ	glyphosate	3 SL (acid eq.)	9	G	Syngenta
Touchdown Total	glyphosate	4.17 SL (acid eq.)	9	G	Syngenta
Cheetah	glufosinate	2.34 SL	10	H	Nufarm
Finale	glufosinate	1 SL	10	H	Bayer
Interline	glufosinate	2.34 SL	10	H	UPI
Liberty	glufosinate	2.34 SL	10	H	Bayer
Rely	glufosinate	1 SL	10	H	Bayer
Predict	norflurazon	78.6 DF	12	F1	Syngenta
Solicam	norflurazon	78.6 DF	12	F1	Syngenta
Command	clomazone	3 ME	13	F4	FMC
Aim	carfentrazone	2 EC	14	E	FMC
BroadStar	flumioxazin	51% WDG	14	E	Valent
Cadet	fluthiacet methyl	0.91 EC	14	E	FMC
Cobra	lactofen	2 EC	14	E	Valent
Delta Goal	oxyfluorfen	4 EC	14	E	Dow AgroSciences
Dismiss	sulfentrazone	4L	14	E	FMC
Flexstar, Rhythm	fomesafen	1.88 ME	14	E	Syngenta; Cheminova
Goal 2XL	oxyfluorfen	2 EC	14	E	Dow AgroSciences
Marvel	fomesafen + fluthiacet-methyl	35 C (2.88 + 0.12 lb/gal)	14	E	FMC
Quicksilver	carfentrazone	1.9 L	14	E	FMC
Reflex, Dawn	fomesafen	2 LC	14	E	Syngenta; Cheminova
Resource	flumiclorac	0.86 EC	14	E	Valent
Ronstar	oxadiazon	50 SP; 2 G	14	E	Bayer
Sharpen	saflufenacil	2.85 SC	14	E	BASF
Sinister	fomesafen	2.87 lb/gal	14	E	Helena

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			WSSA	HRAC	
Spartan	sulfentrazone	4 F	14	E	FMC
Spartan Charge	carfentrazone + sulfentrazone	4.5L (0.35 + 3.15 lb/gal)	14	E	FMC
Sureguard	flumioxazin	0.25% G	14	E	Valent
Ultra Blazer	acifluorfen	2 SL	14	E	UPI
Valor	flumioxazin	51 WDG	14	E	Valent
Cinch	S-metolachlor	7.64 EC	15	K3	DuPont
Degree	acetochlor	3.8 SL	15	K3	Monsanto
Devrinol	napropamide	2 G; 2 EC	15	K3	United Phosphorus
Dual II Magnum	S-metolachlor	7.64 EC	15	K3	Syngenta
Dual Magnum	S-metolachlor	7.62 EC	15	K3	Syngenta
Harness, Warrant	acetochlor	7 EC	15	K3	Monsanto
Outlook	dimethenamid-p	6 EC	15	K3	BASF
Parrlay	metolachlor	8 EC	15	K3	Monsanto
Pennant Magnum	S-metolachlor	7.62 EC	15	K3	Syngenta
Tower	dimethenamid	6 lb/gal	15	K3	BASF
Zidua	pyroxasulfone	85% WDG	15	K3	BASF
Prograss	ethofumesate	1.5 EC	16	N	Bayer
DSMA Plus	DSMA	3.8 SL	17	Z	UAP-Loveland
MSMA (others)	MSMA	6 SL; 6.6 SL	17	Z	several
Alanap	naptalam	2 L	19	P	Crompton Uniroyal
Casoron	dichlobenil	2 G; 4 G	20	L	Crompton
Dyclomec	dichlobenil	4 G	20	L	PBI Gordon
Norosac	dichlobenil	4 G	20	L	PBI Gordon
Gallery	isoxaben	75 DF	21	L	Dow AgroSciences
Gramoxone, Parazone, Quik-Quat	paraquat	2 SL	22	D	Syngenta; Drexel; MANA
Reward	diquat	2 SL	22	D	Syngenta
Basamid Granular	dazomet	99 G	26	Z	BASF
Krenite S	fosamine	4 S	26	Z	DuPont
Balance Flexx	isoxaflutole	2.05 L	27	F2	Bayer
Callisto	mesotrione	4 L	27	F2	Syngenta
Impact, Armezon	topramezone	2.8 L	27	F2	BASF
Laudis	tembotrione	3.5 L	27	F2	Bayer
Laudis	tembotrione + isoxadifen	3.5 SC	27	F2	Bayer

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**Herbicide Trade Name, Common Name, Formulation, Mode (Site) of Action, and Manufacturer, Ordered By WSSA Site of Action [cont.]**

Trade Name	Common Name	Formulation <sup>1</sup>	Resistance Management Site of Action <sup>2</sup>		Manufacturer
			WSSA	HRAC	
Fusion	fluazifop + fenoxaprop	2.56 EC (2 + 0.56 lb/gal)	1 + 1	A + A	Syngenta
Canopy EX	chlorimuron + tribenuron	29.5% WDG (22.7% + 6.8%)	2 + 2	B + B	DuPont
Exceed	primisulfuron + prosulfuron	57 DF (28.5 + 28.5%)	2 + 2	B + B	Syngenta
Finesse	chlorsulfuron + metsulfuron	75 DF (62.5 + 12.5%)	2 + 2	B + B	DuPont
FirstShot SG	thifensulfuron + tribenuron	50% SG (25% + 25%)	2 + 2	B + B	DuPont
Frontrow	cloransulam + flumetsulam	co-pack 84% + 80%	2 + 2	B + B	Dow AgroSciences
Harmony Extra SG	thifensulfuron + tribenuron	50 SG (33.3 + 16.7%)	2 + 2	B + B	DuPont
Landmark II MP	sulfometuron + chlorsulfuron	75 DG (56.25 + 18.75%)	2 + 2	B + B	DuPont
LeadOff	rimsulfuron + thifensulfuron	33.4 SG (16.7 + 16.7%)	2 + 2	B + B	DuPont
Lightning	imazethapyr + imazapyr	70 DG (52.5 + 17.5%)	2 + 2	B + B	BASF
Resolve Q	rimsulfuron + thifensulfuron-methyl	22.4 DG (18.4 + 4%)	2 + 2	B	DuPont
Steadfast Q	nicosulfuron + rimsulfuron	38 DG (25 + 13%)	2 + 2	B + B	DuPont
Afforia	thifensulfuron + tribenuron + flumioxazin	50.8 DG (5 + 5 + 40.8%)	2 + 2 + 14	B + B + E	DuPont
Yukon	halosulfuron + dicamba	67.5 WSG (12.5 + 55%)	2 + 4	B + O	Gowan
Chaparral	aminopyralid + metsulfuron	72 DF (62 + 9%)	2 + 4	B + O	Dow AgroSciences
Cimarron Max	two-part mix: metsulfuron and 2,4-D + dicamba	60 DF and 1.87 + 1 lb/gal	2 + 4 + 4	B + O + O	DuPont
SureStart	acetochlor + flumetsulam + clopyralid	4.25 EC	2 + 4 + 15	B + O + K3	Dow
Oustar	sulfometuron + hexazinone	75 DG (11.8 + 63.2%)	2 + 5	B + C1	DuPont
Envive	chlorimuron + flumioxazin + thifensulfuron	41.3 WDG (9.2% + 29.2% + 0.9%)	2 + 14 + 2	B + E + B	DuPont
Enlite	chlorimuron + flumioxazin + thifensulfuron	47.9 WDG (2.85 + 36.21 + 8.8%)	2 + 14 + 2	B + E + B	DuPont
Trivence	chlorimuron + flumioxazin + metribuzin	61.3 DG (3.9 + 12.8 + 44.6%)	2 + 14 + 5	B + E + C1	DuPont
Realm Q	rimsulfuron + mesotrione	38.75 DG (7.5 + 31.25%)	2 + 27	B + F2	DuPont
Strategy	ethalfuralin + clomazone	2.1 EC (1.6 + 0.5 lb/gal)	3 + 13	K1 + F4	Platte; Loveland
Ornamental Herbicide II	pendimethalin + oxyfluorfen	3 G (1 + 2%)	3 + 14	K1 + E	Scott's
Rout	oryzalin + oxyfluorfen	3 G (1 + 2%)	3 + 14	K1 + E	Scott's Sierra
Snapshot 2.5 TG	trifluralin + isoxaben	2.5 G (2 + 0.5%)	3 + 21	K1 + L	Dow AgroSciences
Showcase	trifluralin + isoxaben + oxyfluorfen	2.5 G	3 + 21 + 14	K1 + L + E	Dow AgroSciences
Weedmaster	dicamba + 2,4-D	3.87 SL (1 + 2.87 lb/gal)	4 + 4	O + O	BASF
Confront	triclopyr + clopyralid	3 L (2.25 + 0.75 lb/gal)	4 + 4	O + O	Dow AgroSciences
Crossbow	2,4-D + triclopyr	3 S (2 + 1 lb/gal)	4 + 4	O + O	Dow AgroSciences
Grazon P + D	picloram + 2,4-D	2.54 L (0.54 + 2 lb/gal)	4 + 4	O + O	Dow AgroSciences
Outlaw	2,4-D + dicamba	2.55 EC (1.45 + 1.1 lb/gal)	4 + 4	O + O	Albaugh
Overdrive	dicamba + diflufenzopyr	0.7 L (0.5 + 0.2 lb/gal)	4 + 4	O + O	BASF
Chaser	2,4-D + triclopyr	3 S (2 + 1 lb/gal)	4 + 4	O + O	Verdicon
Pathway	picloram + 2,4-D	ready-to-use liquid (3 + 11.2% active)	4 + 4	O + O	Dow AgroSciences
Redeem R & P	triclopyr + clopyralid	3 L (2.25 + 0.75 lb/gal)	4 + 4	O + O	Dow AgroSciences
Status	dicamba + diflufenzopyr	56% EC (40 + 16%)	4 + 4	O + O	BASF
Trimec, Endrun	2,4-D + mecoprop + dicamba	various	4 + 4 + 4	O + O + O	various

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			WSSA	HRAC	
Trimec Ester	2,4-D + MCPA + dicamba	3.96 SL (2.44 + 1.3 + 0.22 lb/gal)	4 + 4 + 4	O + O + O	PBI Gordon
Surge	2,4-D + MCPP + dicamba + sulfentrazone	0.06 + 1.4 + 0.5 + 0.22	4 + 14	E + O	PBI Gordon
Canopy	metribuzin + chlorimuron	75 DF (64.3 + 10.7%)	5 + 2	C1 + B	DuPont
Suprend	prometryn +trifloxysulfuron	80 WG (79.3 + 0.7%)	5 + 2	C1 + B	Syngenta
Krovar	bromacil + diuron	80 DF (40 + 40%)	5 + 7	C1 + C2	DuPont
Guardzman Max	atrazine + dimethenamid	5 L (3.3 + 1.7 lb/gal)	5 + 15	C1 + K3	BASF
Keystone	acetochlor + atrazine	5.5 L	5 + 15	C1 + K3	Dow
Prompt	bentazon + atrazine	5 L (2.5 + 2.5 lb/gal)	6 + 5	C3 + C1	Microflo
Storm	bentazon + acifluorfen	4 SL (2.67 + 1.33 lb/gal)	6 + 14	C3 + E	UPI
Duet	propanil + bensulfuron	60 DF (60 + 0.46%)	7 + 2	C2 + B	RiceCo
RicePro	propanil + quinclorac	4.1875 SL (43% + 2%)	7 + 4	C2 + O	RiceCo
RicePyr	propanil + triclopyr	3.3 SL (36.5% + 3.8%)	7 + 4	C2 + O	RiceCo
RiceBeaux	propanil + thiobencarb	6 SL (35% + 31%)	7 + 8	C2 + N	RiceCo
Goosegrass/Crabgrass Control	bensulide + oxadiazon	5.25 G	8 + 14	N + E	Scott's
OneStep	glyphosate + imazapyr	2.16 L (1.53 + 0.637 lb/gal)	9 + 2	G + B	BASF
Costarr	glyphosate + dicamba	2.1 EC (1.5 + 0.6 lb/gal)	9 + 4	G + O	Albaugh
Landmaster	glyphosate + 2,4-D	3.1 EC (1.2 + 1.9 lb/gal)	9 + 4	G + O	Albaugh
Journey	glyphosate + imazapic	1.5 + 0.75 SL	9 + 8	G + B	BASF
Sequence	glyphosate + S-metolachlor	5.25 F (2.25 + 3 lb/gal)	9 + 15	G + K3	Syngenta
Brake FX	fluridone + fluometuron	3.6 FL	12 + 7	F1 + C2	SePRO
Lariat	alachlor + atrazine	4 L (2.5 + 1.5 lb/gal)	13 + 5	K3 + C1	Monsanto
Authority First	sulfentrazone + cloransulam	0.7 DF (0.62 + 0.08 lb/lb)	14 + 2	E + B	FMC
Authority Maxx	sulfentrazone + chlorimuron ethyl	66 DF (0.62 + 0.04 lb/lb)	14 + 2	E + B	FMC
Authority XL	sulfentrazone + chlorimuron	0.7 DG (0.62 + 0.08 lb/lb)	14 + 2	E + B	FMC
OpTill	saflufenacil + imazethapyr	68 WG (17.8 + 50.2)	14 + 2	E + B	BASF
Surveil	flumioxazin + cloransulam	48 WDG (36% + 12%)	14 + 2	E + B	Valent
Valor XLT	flumioxazin + chlorimuron	40.3 WDG (30% + 10.3%)	14 + 2	E + B	Valent
Echelon	sulfentrazone + prodiamine	4 SC	14 + 3	E + K1	FMC
Power Zone	carfentrazone + MCPA + mecoprop + dicamba	2.9 EC (0.04 + 2.21 + 0.44 + 0.22 lb/gal)	14 + 4 + 4 + 4	E + O + O + O	PBI Gordon
Speed Zone	carfentrazone + mecoprop + 2,4-D + dicamba	2.2 EC (0.05 + 1.53 + 0.48 + 0.14 lb/gal)	14 + 4 + 4 + 4	E + O + O + O	PBI Gordon
Authority MTZ	sulfentrazone + metribuzin	45 DG (18 + 27%)	14 + 5	E + C1	FMC
Flexstar GT 3.5	fomesafen + glyphosate	2.8 L (0.56 + 2.26 lb/gal)	14 + 9	K3 + G	Syngenta
Status	dicamba + diflufenzopyr	56% EC (40 + 16%)	4 + 4	O + O	BASF
Display	carfentrazone + fluthiacet-methyl	4.3 SE (4.174 + 0.126 lb/gal)	14 + 14	E + E	FMC
Anthem Maxx	pyroxasulfone + fluthiacet-methyl	2.15 SE (2.087 + 0.063 lb/gal)	14 + 15	E + K3	FMC
Authority Elite, BroadAxe XC	sulfentrazone + S-metolachlor	7 EC (0.7 + 6.3 lb/gal)	14 + 15	E + E	FMC/Syngenta
Integrity	saflufenacil + dimethenamid	5.5 L	14 + 15	E + K3	BASF
Prefix	S-metolachlor + fomesafen	Co-Pak (7.62 EC/2 LC)	14 + 15	E + K3	Syngenta
Verdict	saflufenacil + dimethenamid	5.57 EC (0.57 + 5.0)	14 + 15	E + K3	BASF

(Continued on page 18)

**Herbicide Trade Name, Common Name, Formulation, Mode (Site) of Action, and Manufacturer, Ordered By WSSA Site of Action [cont.]**

Trade Name	Common Name	Formulation <sup>1</sup>	Resistance Management Site of Action <sup>2</sup>		Manufacturer
			WSSA	HRAC	
Freehand	dimethenamid + pendimethalin	1.75 G	15 + 3	K3 + K1	BASF
Axiom	flufenacet + metribuzin	68 DF (54.4 + 13.6%)	15 + 5	K3 + C1	Bayer
Bicep II Magnum	S-metolachlor + atrazine	5.5 L (3.1 + 2.4 lb/gal)	15 + 5	K3 + C1	Syngenta
Bicep Lite II Magnum	S-metolachlor + atrazine	6 L (3.33 + 2.67 lb/gal)	15 + 5	K3 + C1	Syngenta
Boundary	S-metolachlor + metribuzin	7.8 EC (6.3 + 1.5 lb/gal); 6.5 EC (5.25 + 1.25 lb/gal)	15 + 5	K3 + C1	Syngenta
Cinch ATZ	S-metolachlor + atrazine	5.5 F (3.1 + 2.4 lb/gal)	15 + 5	K3 + C1	DuPont
Degree Xtra	acetochlor + atrazine	4 SL	15 + 5	K3 + C1	Monsanto
Harness Extra	acetochlor + atrazine	5.6 L (3.1 + 2.5 lb/gal); 6 L (4.3 + 1.7 lb/gal)	15 + 5	K3 + C1	Monsanto
Keystone	acetochlor + atrazine	5.5 L (3 + 2.5 lb/gal)	15 + 5	K3 + C1	Dow AgroSciences
Acuron	S-metolachlor + atrazine + bicyclopyrone + mesotrione	3.44 L (2.14 lb + 1.0 lb + 0.06 lb + 0.24 lb)	15 + 5 + 27	K3 + C1 + F2	Syngenta
Anthem Flex	pyroxasulfone + carfentrazone	4 SE (3.733 + 0.267 lb/gal)	15 + 14	K3 + E	FMC
Fierce	pyroxasulfone + flumioxazin	76 WDG	15 + 14	K3 + E	FMC
Armezon PRO	dimethenamid + topramezone	5.35 EC (5.25 + 0.1 lb/gal)	15 + 27	K3 + F2	BASF
Corvus	isoxoflutole + thiencazone	2.63 SC (0.75 + 1.88)	27 + 2	F2 + B	Bayer
Halex GT	mesotrione + S-metolachlor + glyphosate	4.4 L (0.209 + 2.09 + 2.09)	27 + 15 + 9	F2, K3 + G	Syngenta

<sup>1</sup> **Liquid** formulations include AC, applicator's concentration; CS, aqueous capsule suspension; E, EC or EW, emulsifiable concentrate; F, flowable; L, liquid; ME, micro-encapsulated; SL, soluble liquid; S, suspension. **Dry** formulations include DF, dry flowable; DG, dispersible granules; G, granules; SP, soluble powder; W, WG or WDG, wettable dispersible granules; WP, wettable powder; WSG, wettable soluble granule.

<sup>2</sup> Herbicide classification according to primary site of action as described by Weed Science Society of America (WSSA) (number designation) and Herbicide Resistance Action Committee (HRAC) (letter designation). *From Mallory-Smith and Retzinger.*

Rotating herbicides so plants are not exposed to a single herbicidal mode of action for several seasons or plant generations is highly recommended as part of a resistance-management program. The classification presented here can be used as a tool to choose herbicides in different site-of-action groups so that mixtures or rotations of active ingredients can be planned. An attempt should be made to rotate herbicides designated with the same number or letter to those with different numbers or letters (i.e., different sites or modes of action). See table on page 19 for sites of action associated with each classification.