

HERBICIDE CLASSIFICATION

REPEATED USE OF HERBICIDES WITH THE SAME SITE OF ACTION CAN RESULT IN THE DEVELOPMENT OF HERBICIDE-RESISTANT WEED POPULATIONS.



by MODE OF ACTION (effect on plant growth)

This chart groups herbicides by their modes of action to assist you in selecting herbicides 1) to maintain greater diversity in herbicide use and 2) to rotate among effective herbicides with different sites of action to delay the development of herbicide resistance.

SITE-OF-ACTION GROUP	NUMBER OF RESISTANT WEED SPECIES IN U.S.	CHEMICAL FAMILY	ACTIVE INGREDIENT	PRODUCT EXAMPLES (TRADE NAME*)
1 LIPID SYNTHESIS INHIBITORS	15	Aryloxyphenoxypropionate (fops)	clodinafop	<i>Discover NG</i>
ACCASE INHIBITORS (acetyl CoA carboxylase)			cyhalofop	<i>Clincher</i>
			fenoxaprop	<i>Ricestar, Tecoma, others</i>
			fluzafop	<i>Fusilade DX</i>
	quiazalofop	<i>Assure II, Targa</i>		
2	Cyclohexanedione (dime)	clethodim	<i>Select Max, others</i>	
		sethoxydim	<i>Poast Plus</i>	
		Phenylpyrazolin	<i>Axial XL</i>	
		IMIDAZOLINONE	imazamox	<i>Raptor, Beyond, Clearmax</i>
3	Imidazolinone	imazapic	<i>Plateau</i>	
		imazaquin	<i>Scepter</i>	
		imazethapyr	<i>Pursuit, Newpath</i>	
4	Pyrimidinylthiobenzoic acid	bispyribac	<i>Regiment</i>	
		pyrithiobac	<i>Staple</i>	
		flucarbazone	<i>Everest, Pre-Pare, Sierra</i>	
5	Sulfonylaminocarbonyl-triazolinones	propoxycarbazone	<i>Olympus</i>	
		thiencarbazone	<i>Varro</i>	
		bensulfuron	<i>Londax</i>	
		chlorimuron	<i>Classic</i>	
		atrazine	<i>AAtrex</i>	
		chlorsulfuron	<i>Glean</i>	
		halosulfuron	<i>Permit</i>	
		iodosulfuron	<i>Autumn</i>	
		mesosulfuron	<i>Osprey</i>	
		metsulfuron	<i>Ally</i>	
		nicosulfuron	<i>Accent Q, Zest*</i>	
		orthosulfamuron	<i>Strada</i>	
6	Sulfonylurea	primisulfuron	<i>Beacon</i>	
		prosulfuron	<i>Peak</i>	
		rimsulfuron	<i>Resolve, Matrix</i>	
		sulfosulfuron	<i>Maverick</i>	
		thifensulfuron	<i>Harmony</i>	
		triasulfuron	<i>Amber</i>	
		tribenuron	<i>Express</i>	
		trifloxysulfuron	<i>Envoke</i>	
		trifluralin	<i>UpBeet</i>	
		cloransulam	<i>FirstRate</i>	
		florasulam	<i>component of Orion</i>	
		flumetsulam	<i>Python, Accolade</i>	
7	Triazolopyrimidine	penoxsulam	<i>Grasp</i>	
		pyroxulam	<i>PowerFlex HL</i>	
		EPSP SYNTHASE INHIBITOR (5-enolpyruvyl-shikimate-3-phosphate)	15	Organophosphorus
4 GROWTH REGULATORS	8	Arylopicolate	halauxifen	<i>Arylex*</i>
TIARI AUXIN RECEPTORS (synthetic auxins)			Benzoic acid	<i>Banvel, Clarity, DIFlex, Engenia*, XtendiMax*, others</i>
			aminopyralid	<i>Milestone</i>
			clopyralid	<i>Stinger</i>
	fluroxypyr	<i>Starane</i>		
19	Carboxylic acid	triclopyr	<i>Grandstand</i>	
		quinclorac	<i>Facet</i>	
0	Phenoxy	2,4-D	<i>2,4-D, others</i>	
		MCPA	<i>MCPA, others</i>	
5 PHOTOSYNTHESIS INHIBITORS	26	Phenylcarbamate	desmedipham	<i>Betenex</i>
PHOTOSYSTEM II INHIBITORS (different binding than 6 & 7)			phenmedipham	<i>component of Betamix</i>
			atrazine	<i>AAtrex, others</i>
			prometryn	<i>Caparol</i>
	simazine	<i>Princap</i>		
6	Triazine	hexazinone	<i>Velpar</i>	
		metribuzin	<i>Metribuzin, others</i>	
1	Triazinone	terbacil	<i>Sinbar</i>	
		benazon	<i>Basagran, others</i>	
7	Benzothiadiazole	bromoxynil	<i>Buctril, others</i>	
		propanil	<i>SuperWham</i>	
9	Amide	diuron	<i>Direx, Karmex</i>	
		fluometuron	<i>Cotolan</i>	
0	Urea	linuron	<i>Lorox, Linex</i>	
		GLUTAMINE SYNTHETASE INHIBITOR	1	Organophosphorus
12 PIGMENT INHIBITORS	1	none recognized	fluridone	<i>Sonar</i>
PHYTOENE DESATURASE (PDS) INHIBITOR			DOXP SYNTHASE INHIBITOR (1-DEOXY-D-XYLULOSE 5-PHOSPHATE)	isoxalolone
	27	Isoxazole		isoxafutole
pyrasulfotole			<i>component of Huskie</i>	
pyrazolone			<i>topramezone, Armezon, Impact</i>	
2	Triketone	mesotrione	<i>Callisto</i>	
		bicyclopyrone	<i>component of Acuron</i>	
14 CELL MEMBRANE DISRUPTERS	3	Aryl triazinone	sulfentrazone	<i>Spartan</i>
PPO INHIBITORS			carfentrazone	<i>Aim</i>
			fluthiacet	<i>Cadet</i>
			acifluorfen	<i>Ultra Blazer</i>
	fomesafen	<i>Flexstar, Reflex, others</i>		
22	Diphenylether	lactofen	<i>Cobra, Phoenix</i>	
		flumiclorac	<i>Resource</i>	
		flumioxazin	<i>Valor, Rowel</i>	
5	N-phenylphthalimide	sulfentrazone	<i>Spartan</i>	
		flumioxazin	<i>Valor, Rowel</i>	
		saflufenacil	<i>Sharpen</i>	
5	Pyrimidinedione	saflufenacil	<i>Sharpen</i>	
		diquat	<i>Reglone</i>	
0	Bipyridylum	paraquat	<i>Gramoxone SL</i>	
		SEEDLING ROOT GROWTH INHIBITORS	6	Benzamide
MICROTUBULE INHIBITORS	ethylfuralin	<i>Sonalan</i>		
	pendimethalin	<i>Prowl H2O, others</i>		
	trifluralin	<i>Treflan, others</i>		
8 SEEDLING SHOOT GROWTH INHIBITORS	5	Thiocarbamate	butylate	<i>Sutan +</i>
LIPID SYNTHESIS INHIBITOR (not ACCase)			cycloate	<i>Ro-Neet</i>
			EPTC	<i>Eradicane, Eptam</i>
			thiobencarb	<i>Bolero</i>
	trilalate	<i>Far-Go</i>		
1	Chloroacetamide	acetochlor	<i>Degree, Harness, Surpass NXT, Topnotch, Warrant, others</i>	
		alachlor	<i>Intro, Micro-Tech</i>	
		s-metolachlor	<i>Dual Magnum, others</i>	
		dimethenamid-P	<i>Outlook</i>	
0	Oxyacetamide	flufenacet	<i>Defne</i>	
		pyrazolone	<i>pyroxasulfone, Zidua</i>	
16 SPECIFIC SITE UNKNOWN	0	Benzofuran	ethofumesate	<i>Nortron</i>
17 UNDEFINED	1	Arsenical	MSMA	<i>MSMA</i>
NUCLEIC ACID INHIBITOR				

by PREMIX

This chart lists premix herbicides alphabetically by their trade names so you can identify the premix's component herbicides and their respective site-of-action groups. Refer to the Site-of-Action chart on the left for more information.

PREMIX	COMPONENT	
	ACTIVE INGREDIENT	TRADE NAME*
ACURON	bicyclopyrone	-----
	mesotrione	<i>Callisto</i>
	atrazine	<i>AAtrex</i>
	s-metolachlor	<i>Dual II Magnum</i>
Acuron Flexi*	bicyclopyrone	-----
	mesotrione	<i>Callisto</i>
	s-metolachlor	<i>Dual II Magnum</i>
	thifensulfuron	<i>Harmony</i>
AFFINITY BROADSPEC (Affinity Tankmix)	tribenuron	<i>Express</i>
	thifensulfuron	<i>Harmony</i>
	tribenuron	<i>Express</i>
AFFORIA	flumioxazin	<i>Valor</i>
	dicamba	<i>Clarity</i>
	thifensulfuron	<i>Harmony</i>
	tribenuron	<i>Express</i>
AGILITY SG	thifensulfuron	<i>Harmony</i>
	tribenuron	<i>Express</i>
	metsulfuron	<i>Ally</i>
	thifensulfuron	<i>Harmony</i>
ALLY EXTRA	tribenuron	<i>Express</i>
	metsulfuron	<i>Ally</i>
	pyroxasulfone	<i>Zidua</i>
	fluthiacet	<i>Cadet</i>
ANTHEM ATZ	atrazine	<i>AAtrex</i>
	pyroxasulfone	<i>Zidua</i>
	carfentrazone	<i>Aim</i>
	pyroxasulfone	<i>Zidua</i>
ANTHEM FLEX	fluthiacet	<i>Cadet</i>
	tropamezone	<i>Armezon</i>
	dimethenamid-P	<i>Outlook</i>
	sulfentrazone	<i>Spartan</i>
ANTHEM MAXX	sulfentrazone	<i>Spartan</i>
	imazethapyr	<i>Pursuit</i>
	sulfentrazone	<i>Spartan</i>
	s-metolachlor	<i>Dual Magnum</i>
ARMEZON PRO	sulfentrazone	<i>Spartan</i>
	chlorimuron	<i>Classic</i>
	iodosulfuron	<i>Autumn</i>
	thiencarbazone	<i>Varro</i>
AUTHORITY ASSIST	sulfentrazone	<i>Spartan</i>
	chlorimuron	<i>Classic</i>
	iodosulfuron	<i>Autumn</i>
	thiencarbazone	<i>Varro</i>
AUTHORITY ELITE	thiencarbazone	<i>Varro</i>
	pinoxaden	<i>Axial XL</i>
	fluroxypyr	<i>Starane</i>
	rimsulfuron	<i>Resolve</i>
BASIC BLEND	thifensulfuron	<i>Harmony</i>
	desmedipham	<i>Betenex</i>
	phenmedipham	-----
	s-metolachlor	<i>Dual II Magnum</i>
BETAMIX	s-metolachlor	<i>Dual II Magnum</i>
	atrazine	<i>AAtrex</i>
	s-metolachlor	<i>Dual II Magnum</i>
	metribuzin	<i>Metribuzin</i>
BOUNDARY	fomesafen	<i>Flexstar</i>
	fluridone	<i>Sonar</i>
	atrazine	<i>AAtrex</i>
	s-metolachlor	<i>Dual II Magnum</i>
BRAKE F2	atrazine	<i>AAtrex</i>
	carfentrazone	<i>Aim</i>
	quinclorac	<i>Facet</i>
	dicamba	<i>Clarity</i>
BREAKFREE NXT ATZ (Breakfree NXT Lite)	atrazine	<i>AAtrex</i>
	s-metolachlor	<i>Dual II Magnum</i>
	carfentrazone	<i>Aim</i>
	quinclorac	<i>Facet</i>
BROADAXE	atrazine	<i>AAtrex</i>
	s-metolachlor	<i>Dual II Magnum</i>
	carfentrazone	<i>Aim</i>
	quinclorac	<i>Facet</i>
BROADHEAD	bromoxynil	<i>Buctril</i>
	MCPA	<i>MCPA</i>
	alachlor	<i>Micro-Tech</i>
	atrazine	<i>AAtrex</i>
BRONATE	mesotrione	<i>Callisto</i>
	glyphosate	<i>glyphosate</i>
	mesotrione	<i>Callisto</i>
	atrazine	<i>AAtrex</i>
BULLET	atrazine	<i>AAtrex</i>
	mesotrione	<i>Callisto</i>
	glyphosate	<i>glyphosate</i>
	mesotrione	<i>Callisto</i>
CALLISTO GT	glyphosate	<i>glyphosate</i>
	mesotrione	<i>Callisto</i>
	atrazine	<i>AAtrex</i>
	prometryn	<i>Caparol</i>
CALLISTO XTRA	simazine	<i>Princap</i>
	hexazinone	<i>Velpar</i>
	metribuzin	<i>Metribuzin, others</i>
	uracil	<i>Sinbar</i>
CANOPY	metribuzin	<i>Metribuzin</i>
	chlorimuron	<i>Classic</i>
	tribenuron	<i>Express</i>
	thiencarbazone	<i>Varro</i>
CANOPY EX	thiencarbazone	<i>Varro</i>
	tembtrione	<i>Laudis</i>
	MCPA	<i>MCPA</i>
	clopyralid	<i>Stinger</i>
CAPRENO	bromoxynil	<i>Buctril, others</i>
	propanil	<i>SuperWham</i>
	diuron	<i>Direx, Karmex</i>
	fluometuron	<i>Cotolan</i>
CARNIVORE	linuron	<i>Lorox, Linex</i>
	s-metolachlor	<i>Dual II Magnum</i>
	atrazine	<i>AAtrex</i>
	quinclorac	<i>Facet</i>
CINCH ATZ (Cinch ATZ Lite)	imazethapyr	<i>Newpath</i>
	2,4-D	<i>2,4-D</i>
	fluroxypyr	<i>Starane</i>
	MCPA	<i>MCPA</i>
CLEARPATH	fluroxypyr	<i>Starane</i>
	MCPA	<i>MCPA</i>
	fluroxypyr	<i>Starane</i>
	thiencarbazone	<i>Varro</i>
COLT + SALVO (Trump Card)	fluroxypyr	<i>Starane</i>
	MCPA	<i>MCPA</i>
	fluroxypyr	<i>Starane</i>
	thiencarbazone	<i>Varro</i>
COLT + SWORD	fluroxypyr	<i>Starane</i>
	MCPA	<i>MCPA</i>
	fluroxypyr	<i>Starane</i>
	thiencarbazone	<i>Varro</i>
CORVUS	isoxafutole	<i>Balance Flexx</i>
	clopyralid	<i>Stinger</i>
	2,4-D	<i>2,4-D</i>
	clopyralid	<i>Stinger</i>
CURTAIL	MCPA	<i>MCPA</i>
	acetochlor	<i>Degree</i>
	atrazine	<i>AAtrex</i>
	dicamba	<i>DIFlexx</i>
CURTAIL M	tembtrione	<i>Laudis</i>
	chlorimuron	<i>Classic</i>
	rimsulfuron	<i>Resolve</i>
	flumioxazin	<i>Valor</i>
DILEX DUO*	flumioxazin	<i>Valor</i>
	chlorimuron	<i>Classic</i>
	thifensulfuron	<i>Harmony</i>
	flumioxazin	<i>Valor</i>
DILIGENT*	chlorimuron	<i>Classic</i>
	thifensulfuron	<i>Harmony</i>
	flumioxazin	<i>Valor</i>
	s-metolachlor	<i>Dual II Magnum</i>
ENLIST DUO	atrazine	<i>AAtrex</i>
	glyphosate	<i>glyphosate</i>
	glyphosate	<i>glyphosate</i>
	atrazine	<i>AAtrex</i>
ENLIST DUO	glyphosate	<i>glyphosate</i>
	chlorimuron	<i>Classic</i>
	thifensulfuron	<i>Harmony</i>
	flumioxazin	<i>Valor</i>
ENLITE	chlorimuron	<i>Classic</i>
	thifensulfuron	<i>Harmony</i>
	flumioxazin	<i>Valor</i>
	s-metolachlor	<i>Dual II Magnum</i>
ENVIVE	atrazine	<i>AAtrex</i>
	glyphosate	<i>glyphosate</i>
	imazethapyr	<i>Pursuit</i>
	glyphosate	<i>glyphosate</i>
EXPERT	atrazine	<i>AAtrex</i>
	glyphosate	<i>glyphosate</i>
	atrazine	<i>AAtrex</i>
	glyphosate	<i>glyphosate</i>
EXTREME	atrazine	<i>AAtrex</i>
	glyphosate	<i>glyphosate</i>
	atrazine	<i>AAtrex</i>
	glyphosate	<i>glyphosate</i>
FIELD MASTER	atrazine	<i>AAtrex</i>
	glyphosate	<i>glyphosate</i>
	flumioxazin	<i>Valor</i>
	pyroxasulfone	<i>Zidua</i>
FIERCE	pyroxasulfone	<i>Zidua</i>
	flumioxazin	<i>Valor</i>
	pyroxasulfone	<i>Zidua</i>
	chlorimuron	<i>Classic</i>
FIERCE XLT	chlorsulfuron	<i>Glean</i>
	metsulfuron	<i>Ally</i>
	chlorsulfuron	<i>Glean</i>
	flucarbazone	<i>Everest</i>
FINESSE	fomesafen	<i>Flexstar</i>
	glyphosate	<i>glyphosate</i>
	aminopyralid	<i>Milestone</i>
	2,4-D	<i>2,4-D</i>
FINESSE GRASS AND BROADLEAF	fenoxaprop	<i>Tecoma</i>
	pinoxaden	<i>Axial XL</i>
	atrazine	<i>AAtrex</i>
	fluzafop	<i>Fusilade DX</i>
FLEXSTAR GT	fenoxaprop	<i>Tecoma</i>
	pinoxaden	<i>Axial XL</i>
	atrazine	<i>AAtrex</i>
	fluzafop	<i>Fusilade DX</i>
FOREFRONT HL	fenoxaprop	<i>Tecoma</i>
	pinoxaden	<i>Axial XL</i>
	atrazine	<i>AAtrex</i>
	fluzafop	<i>Fusilade DX</i>
FOXFIRE	fenoxaprop	<i>Tecoma</i>
	pinoxaden	<i>Axial XL</i>
	atrazine	<i>AAtrex</i>
	fluzafop	<i>Fusilade DX</i>
FULTIME NXT	fenoxaprop	<i>Tecoma</i>
	pinoxaden	<i>Axial XL</i>
	atrazine	<i>AAtrex</i>
	fluzafop	<i>Fusilade DX</i>
FUSION	fenoxaprop	<i>Tecoma</i>
	pinoxaden	<i>Axial XL</i>
	atrazine	<i>AAtrex</i>
	fluzafop	<i>Fusilade DX</i>
GANSTER	fenoxaprop	<i>Tecoma</i>
	pinoxaden	<i>Axial XL</i>
	atrazine	<i>AAtrex</i>
	fluzafop	<i>Fusilade DX</i>
GOLDSKY	fenoxaprop	<i>Tecoma</i>
	pinoxaden	<i>Axial XL</i>
	atrazine	<i>AAtrex</i>
	fluzafop	<i>Fusilade DX</i>
GUARDSMAN MAX (G-Max Lite)	fenoxaprop	<i>Tecoma</i>
	pinoxaden	<i>Axial XL</i>
	atrazine	<i>AAtrex</i>
	fluzafop	<i>Fusilade DX</i>
HALEX GT	fenoxaprop	<i>Tecoma</i>
	pinoxaden	<i>Axial XL</i>
	atrazine	<i>AAtrex</i>
	fluzafop	<i>Fusilade DX</i>
HARNES XTRA	fenoxaprop	<i>Tecoma</i>
	pinoxaden	<i>Axial XL</i>
	atrazine	<i>AAtrex</i>
	fluzafop	<i>Fusilade DX</i>
HORNET	fenoxaprop	<i>Tecoma</i>
	pinoxaden	<i>Axial XL</i>
	atrazine	<i>AAtrex</i>