

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 (MOA) (effect on plant growth)

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

SITE-OF-ACTION GROUP ¹		NUMBER OF RESISTANT WEED SPECIES IN U.S.		
	SITE OF ACTION	CHEMICAL FAMILY	ACTIVE INGREDIENT	PRODUCT EXAMPLES (TRADE NAME)
LIPID SYNTHESIS INHIBITORS				
1	ACCASE INHIBITORS (acetyl CoA carboxylase)	Aryloxyphenoxypropionate (fops)	clodinafop	<i>Discover NG</i>
			cyhalofop	<i>Clincher</i>
			fenoxaprop	<i>Ricestar HT, others</i>
			flusilade	<i>Fusilade DX</i>
			quizalofop	<i>Assure II, others</i>
2	ALS INHIBITORS (acetolactate synthase)	Cyclohexanedione (dims)	clethodim	<i>Select Max, others</i>
			sethoxydim	<i>Poast, Poast Plus</i>
			pyrithiobac	<i>Regiment</i>
			pyrithiobac	<i>Staple</i>
			pyrithiobac	<i>Londax</i>
9	EPSP SYNTHASE INHIBITOR (5-enolpyruvyl-shikimate-3-phosphate)	Glycine	glyphosate	<i>Roundup, several others</i>
			glyphosate	<i>Roundup, several others</i>
			glyphosate	<i>Roundup, several others</i>
			glyphosate	<i>Roundup, several others</i>
			glyphosate	<i>Roundup, several others</i>

GROWTH REGULATORS				
4	SYNTHETIC AUXINS (TIR1, AFB1-5 and unknown auxin receptors)	6-Arylpicolinates	florpyrauxifen	<i>Loyant</i>
			halauxifen	<i>Elevore</i>
			dicamba	<i>Banvel, Clarity, DiFlexx, others</i>
			2,4-D	<i>2,4-D, Enlist One, others</i>
			MCPA	<i>MCPA, others</i>
19	AUXIN TRANSPORT INHIBITOR	0	aminopyralid	<i>Milestone</i>
			clopyralid	<i>Stinger</i>
			halauxifen	<i>Elevore</i>
			fluroxypyr	<i>Starane Ultra</i>
			triclopyr	<i>Garlon, Remedy Ultra</i>

PHOTOSYNTHESIS INHIBITORS				
5	PHOTOSYSTEM II INHIBITORS (D1 Serine 264 binders and non-histidine 215 binders)	28	propanil	<i>SuperWham</i>
			atrazine	<i>AAtrex, others</i>
			ametryn	<i>Evik</i>
			prometon	<i>Pramitol</i>
			prometryn	<i>Caparol</i>
6	PHOTOSYSTEM II INHIBITORS (D1 Histidine 215 binders)	1	simazine	<i>Princep</i>
			hexazinone	<i>Velpar</i>
			metribuzin	<i>Metribuzin, others</i>
			terbacil	<i>Sinbar</i>
			diuron	<i>Direx, Karmex</i>

NITROGEN METABOLISM INHIBITOR				
10	GLUTAMINE SYNTHETASE INHIBITOR	3	Phosphinic acid	glufosinate

PIGMENT INHIBITORS				
12	PHYTOENE DESATURASE (PDS) INHIBITORS	1	Diphenyl heterocycle	fluridone
13	DOXP SYNTHASE INHIBITOR (1-DEOXY-D-XULOSE 5-PHOSPHATE)	2	N-Phenyl heterocycle	norfurazon
27	HPPD INHIBITORS	3	Phenyl ether	diffenican

CELL MEMBRANE DISRUPTERS				
14	PPO INHIBITORS	6	Diphenyl ether	acifluorfen
			N-Phenyl imide	fluridone
				fluridone
				fluridone
				fluridone
22	PHOTOSYSTEM I ELECTRON DIVERTER	6	Pyridinium	diquat

SEEDLING ROOT GROWTH INHIBITORS				
3	MICROTUBULE ASSEMBLY INHIBITORS	6	Benzamide	pronamide
			Dinitroaniline	ethalfluralin
				pendimethalin
				trifluralin
				trifluralin

SEEDLING SHOOT GROWTH INHIBITORS				
15	VERY LONG-CHAIN FATTY ACID SYNTHESIS INHIBITORS	8	Benzofuran	ethofumesate
			α-Chloroacetamide	acetochlor
				acetochlor
				acetochlor
				acetochlor
29	CELLULOSE BIOSYNTHESIS INHIBITORS	3	Aylkylazine	indaziflam

UNDEFINED				
0	UNKNOWN	1	Amide	napropamide

¹ Site of Action Group numbers follow the revised 2020 Herbicide Resistance Action Committee (HRAC) classification.
*Indicates product is not registered for use at the time of printing.
Check for a label and Material Safety Data Sheet at www.cdms.net to confirm status. This chart contains some restricted use pesticides. Always consult label prior to use.
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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.

COMPONENT		SITE-OF-ACTION GROUP	
PREMIX	ACTIVE INGREDIENT	TRADE NAME	
ACURON	bicyclopyrone	Optogen	27
	mesotrione	Callisto	27
	atrazine	AAtrex	5
	s-metolachlor	Dual II Magnum	15
ACURON FLEXI	bicyclopyrone	Optogen	27
	mesotrione	Callisto	27
	s-metolachlor	Dual II Magnum	15
ACURON GT	bicyclopyrone	Optogen	27
	mesotrione	Callisto	27
	s-metolachlor	Dual Magnum	15
AFFINITY BROADSPEC (Affinity TankMix)	thifensulfuron	Harmony	2
	tribenuron	Express	2
	thifensulfuron	Harmony	2
	tribenuron	Express	2
	flumioxazin	Valor	14
ALLY EXTRA	thifensulfuron	Harmony	2
	tribenuron	Express	2
	metasulfuron	Ally	1
ANTHEM FLEX	pyroxasulfone	Zidua	15
	carfentrazone	Aim	14
ANTHEM MAXX	pyroxasulfone	Zidua	15
	fluthiacet	Cadet	14
ARMEZON PRO	topramezone	Armezon	27
	dimethenamid-P	Outlook	15
AUTHORITY ASSIST	sulfentrazone	Spartan	14
	imazethapyr	Pursuit	2
AUTHORITY EDGE	sulfentrazone	Spartan	14
	pyroxasulfone	Zidua	15
AUTHORITY FIRST	sulfentrazone	Spartan	14
	clorasulfam	FirstRate	2
AUTHORITY SUPREME	sulfentrazone	Spartan	14
	pyroxasulfone	Zidua	15
AUTHORITY XL	sulfentrazone	Spartan	14
	chlormuron	Classic	2
AUTUMN SUPER	iodosulfuron	Autumn	2
	thiencarbazon	Varro	2
AXIAL BOLD	pinoxaden	Axial XL	1
	fenoxaprop	Ricestar	1
AXIAL STAR	pinoxaden	Axial XL	1
	fluroxypyr	Starane	4
BASIS BLEND	rimisulfuron	Resolve	2
	thifensulfuron	Harmony	2
BICEP II MAGNUM (Bicep Lite II Magnum)	s-metolachlor	Dual II Magnum	15
	atrazine	AAtrex	5
BOUNDARY	s-metolachlor	Dual Magnum	15
	metribuzin	Metribuzin	5
BROADAXE XC	s-metolachlor	Dual Magnum	15
	sulfentrazone	Spartan 4F	14
BRONATE ADVANCED	bromoxynil	Maestro	27
	MCPA	MCPA	4
CALIBRA	s-metolachlor	Dual II Magnum	15
	mesotrione	Callisto	27
CALLISTO GT	mesotrione	Callisto	27
	glyphosate	glyphosate	9
CALLISTO XTRA	mesotrione	Callisto	27
	atrazine	AAtrex	5
CAPRENO	thiencarbazon	Varro	2
	tembotrione	Laudis	27
CARNIVORE	MCPA	MCPA	4
	fluroxypyr	Starane	4
CHEETAH MAX	bromoxynil	Maestro	6
	glufosinate	Liberty	10
CLEARPATH	fomesafen	Reflex	14
	quinclorac	Facet	14
COLT AS	imazethapyr	Newpath	2
	clopyralid	Stinger	4
COLT + SALVO	fluroxypyr	Starane	4
	2,4-D	2,4-D	4
COLT + SWORD	fluroxypyr	Starane	4
	MCPA	MCPA	4
CORVUS	fluroxypyr	Starane	4
	thiencarbazon	Varro	2
COYOTE	isoxaflutole	Balance Flexx	27
	s-metolachlor	Dual II Magnum	15
CURTAIL	mesotrione	Callisto	27
	clopyralid	Stinger	4
CURTAIL M	2,4-D	2,4-D	4
	clopyralid	Stinger	4
DEGREE XTRA	MCPA	MCPA	4
	acetochlor	Degree	15
DIFLEXX DUO	atrazine	AAtrex	5
	dicamba	Diflexx	4
DIMETRIC CHARGED	tembotrione	Laudis	27
	metribuzin	Metribuzin	5
ENLIST DUO	flumioxazin	Valor	14
	2,4-D	2,4-D	4
ENLITE	glyphosate	glyphosate	9
	chlormuron	Classic	2
ENLITE	thifensulfuron	Harmony	2
	flumioxazin	Valor	14
ENWIVE	chlormuron	Classic	2
	thifensulfuron	Harmony	2
FIERCE EZ	flumioxazin	Valor	14
	pyroxasulfone	Zidua	15
FIERCE MTZ	flumioxazin	Valor	14
	pyroxasulfone	Zidua	15
FIERCE XLT	metribuzin	Metribuzin	5
	flumioxazin	Valor	14
FINESSE	pyroxasulfone	Zidua	15
	chlormuron	Classic	2
FIRSTSHOT	chlorsulfuron	Glean	2
	metasulfuron	Ally	2
FLEXSTAR GT	thifensulfuron	Harmony	2
	tribenuron	Express	2
FULTIME NXT	fomesafen	Flexstar	14
	glyphosate	glyphosate	9
FUSION	acetochlor	TopNotch	15
	atrazine	AAtrex	5
GOLDSKY	fluzifop	Fusilade DX	1
	fenoxaprop	Puma	1
GRADONNEXT HL	pyrasulfam	PowerFlex HL	2
	florasulam	-----	2
HALEX GT	fluroxypyr	Starane	4
	aminopyralid	Milestone	4
HARVEST EXTRA	2,4-D	2,4-D	4
	s-metolachlor	Dual Magnum	15
HARVEST XTRA	mesotrione	Callisto	27
	glyphosate	glyphosate	9
HARNESS MAX	thifensulfuron	Harmony	2
	tribenuron	Express	2
HARNESS XTRA	acetochlor	Harness	15
	mesotrione	Callisto	27
HORNET	acetochlor	Harness	15
	atrazine	AAtrex	5
HUSKIE	clopyralid	Stinger	4
	flumetsulam	Python	2
HUSKIE COMPLETE	pyrasulfam	-----	27
	bromoxynil	Maestro	27
HUSKIE FX	pyrasulfam	-----	27
	thiencarbazon	Varro	2
IMPACT CORE	pyrasulfam	-----	27
	fluroxypyr	Starane Ultra	4
IMPACTZ	acetochlor	Harness	15
	topramezone	Impact	27
INTERMOC	atrazine	AAtrex	5
	topramezone	Impact	27
KATAGON	glufosinate	Liberty	10
	s-metolachlor	Dual Magnum	15
KEYSTONE NXT (Keystone LA NXT)	nicosulfuron	Accent Q	2
	tolpyralate	Shieldex	27
KOCCHIADORE	acetochlor	Surpass NXT	15
	atrazine	AAtrex	5
	2,4-D	2,4-D, others	4
	fluroxypyr	Starane	4
	fluroxypyr	Starane	4
	bromoxynil	Maestro	27