

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.

MODE OF ACTION	CHEMICAL FAMILY	ACTIVE INGREDIENT	PRODUCT EXAMPLES (TRADE NAME [®])
1 ACCASE INHIBITORS (acetyl CoA carboxylase)	Aryloxyphenoxypropionate (fops)	clodinafop cyhalofop fenoxaprop fluzifop quizalofop	<i>Discover NG</i> <i>Clincher</i> <i>Ricestar, Tecoma, others</i> <i>Fusilade DX</i> <i>Assure II, Targa</i>
	Cyclohexanedione (dims)	clethodim sethoxydim	<i>Select Max, others</i> <i>Poast, Poast Plus</i>
	Phenylpyrazolin	pinoxaden	<i>Axial XL</i>
2 ALS INHIBITORS (acetolactate synthase)	Imidazolinone	imazamox imazapic imazaquin imazethapyr	<i>Raptor, Beyond, Clearmax</i> <i>Plateau</i> <i>Scepter</i> <i>Pursuit, Newpath</i>
	Pyrimidinylthiobenzoic acid	bispyribac pyrithiobac	<i>Regiment</i> <i>Staple</i>
	Sulfonamidecarboxytriazolinones	flucarbazone propoxycarbazone thiencarbazone	<i>Everest, Pre-Pre, Sierra</i> <i>Olympus</i> <i>Varro</i>
	Sulfonyleurea	bensulfuron chlormuron chlorsulfuron halosulfuron iodosulfuron mesosulfuron metsulfuron nicosulfuron orthosulfamuron primisulfuron prosulfuron rimsulfuron sulfosulfuron thifensulfuron triasulfuron tribenuron trifloxysulfuron triflusulfuron cloransulam florasulam flumetsulam penoxsulam pyroxulam	<i>Londax</i> <i>Classic</i> <i>Glean</i> <i>Permit</i> <i>Autumn</i> <i>Osprey</i> <i>Ally</i> <i>Accent Q, Zest</i> <i>Strada</i> <i>Beacon</i> <i>Peak</i> <i>Resolve, Matrix</i> <i>Maverick</i> <i>Harmony</i> <i>Amber</i> <i>Express</i> <i>Envoy</i> <i>UpBeet</i> <i>FirstRate</i> <i>component of Orion</i> <i>Python, Accolade</i> <i>Grasp</i> <i>PowerFlex HL</i>
9 EPSP SYNTHASE INHIBITOR (5-enolpyruvyl-shikimate-3-phosphate)	Organophosphorus	glyphosate	<i>Roundup, Touchdown, several</i>
4 TIR1 AUXIN RECEPTORS (synthetic auxins)	Arylpicolinate	halauxifen	<i>Arylex*, Elevore*</i>
	Benzoic acid	dicamba	<i>Banvel, Clarity, DiFlexx, Engenia, Fekapan*, XtendiMax, others</i>
	Aminopyridid	aminopyralid	<i>Milestone</i>
	Carboxylic acid	clopyralid fluroxypyr triclopyr quinclorac	<i>Stinger</i> <i>Starane</i> <i>Grandstand</i> <i>Facet</i>
	Phenoxy	2,4-D MCPA	<i>2,4-D, others</i> <i>MCPA, others</i>
19 AUXIN TRANSPORT INHIBITOR	Semicarbazone	diffenozopyr	<i>component of Status</i>
5 PHOTOSYSTEM II INHIBITORS (different binding than 6 & 7)	Phenylcarbamate	desmedipham phenmedipham	<i>Betenex</i> <i>component of Betamix</i>
	Triazine	atrazine prometryn simazine	<i>AAtrex, others</i> <i>Caporal</i> <i>Princpp</i>
	Triazinone	hexazinone metribuzin	<i>Velpar</i> <i>Metribuzin, others</i>
	Uracil	terbacil	<i>Sinbar</i>
6 PHOTOSYSTEM II INHIBITORS (different binding than 5 & 7)	Benzothiadiazole	benazone	<i>Basagran, others</i>
	Nitrile	bromoxynil	<i>Buctril, others</i>
7 PHOTOSYSTEM II INHIBITORS (different binding than 5 & 6)	Amide	propanil	<i>SuperWham</i>
	Urea	diuron fluometuron linuron	<i>Direx, Karmex</i> <i>Coloran</i> <i>Lorox, Linex</i>
10 GLUTAMINE SYNTHETASE INHIBITOR	Organophosphorus	glufosinate	<i>Liberty, Cheetah</i>
12 PHYTOENE DESATURASE (PDS) INHIBITOR	none recognized	fluridone	<i>Sonar</i>
13 DOXP SYNTHASE INHIBITOR (1-DEOXY-D-XULOSE 5-PHOSPHATE)	Isoxazolidinone	clomazone	<i>Command</i>
27 HPPD INHIBITORS	Isoxazole Pyrazole Pyrazolone	isoxaflutole pyrasulfotole topramezone	<i>Balance Flexx</i> <i>component of Huskie</i> <i>Armezon, Impact</i>
	Triketone	mesotrione tembotrione bicyclopyrone	<i>Callisto</i> <i>Laudis</i> <i>component of Acuron</i>
14 PPO INHIBITORS	Aryl triazinone	sulfentrazone carfentrazone fluthiacet	<i>Spartan</i> <i>Aim</i> <i>Cadet</i>
	Diphenylether	acifluorfen fomesafen lactofen	<i>Ultra Blazer</i> <i>Flexstar, Reflex, others</i> <i>Cobra, Phoenix</i>
	N-phenylphthalimide	flumiclorac	<i>Resource</i>
	Pyrimidinone	flumioxazin saflufenacil	<i>Valor, Rowel</i> <i>Sharpen</i>
22 PHOTOSYSTEM I ELECTRON DIVERTER	Bipyridium	diquat paraquat	<i>Reglone</i> <i>Gramoxone SL</i>
3 MICROTUBULE INHIBITORS	Benzamide	pronamide	<i>Kerb</i>
	Dinitroaniline	ethalfuralin pendimethalin trifluralin	<i>Sonalan</i> <i>Prowl H2D, others</i> <i>Treflan, others</i>
8 LIPID SYNTHESIS INHIBITOR (not ACCase)	Thiocarbamate	butylate cycloate EPIC thiobencarb triallate	<i>Sutan +</i> <i>Ro-Neet</i> <i>Eradicane, Eptam</i> <i>Bolero</i> <i>Far-Go</i>
15 LONG-CHAIN FATTY ACID INHIBITORS	Chloroacetamide	acetochlor alachlor	<i>Degree, Harness, Surpass NXT, Topnotch, Warrant, others</i> <i>Intro, Micro-Tech</i>
	s-metolachlor	s-metolachlor	<i>Dual Magnum, others</i>
	Dimethenamid-P	dimethenamid-P	<i>Outlook</i>
	Oxyacetamide	flufenacet	<i>Define</i>
	Pyrazole	pyroxasulfone	<i>Zidua</i>
16 SPECIFIC SITE UNKNOWN	Benzofuran	ethofumesate	<i>Nortron</i>
17 NUCLEIC ACID INHIBITOR	Arsenical	MSMA	<i>MSMA</i>

For more information and links to additional resources, visit TakeActionOnWeeds.com

TAKE ACTION IS ENDORSED BY THE FOLLOWING ORGANIZATIONS:



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	ACTIVE INGREDIENT	TRADE NAME [®]	SITE-OF-ACTION GROUP
ACURON	bicyclopyrone mesotrione atrazine s-metolachlor	----- <i>Callisto</i> <i>AAtrex</i> <i>Dual II Magnum</i>	27 27 5 15
Acuron Flexi	bicyclopyrone mesotrione s-metolachlor	----- <i>Callisto</i> <i>Dual II Magnum</i>	27 27 15
AFFINITY BROADSPEC (Affinity Tankmix)	thifensulfuron tribenuron tribenuron	<i>Harmony</i> <i>Express</i> <i>Express</i>	2 2 2
AFFORIA	thifensulfuron tribenuron flumioxazin dicamba	<i>Harmony</i> <i>Express</i> <i>Valor</i> <i>Clarity</i>	2 2 14 4
AGILITY SG	thifensulfuron tribenuron metsulfuron	<i>Harmony</i> <i>Express</i> <i>Ally</i>	2 2 2
ALLY EXTRA	thifensulfuron tribenuron metsulfuron	<i>Harmony</i> <i>Express</i> <i>Ally</i>	2 2 2
ANTHEM ATZ	pyroxasulfone fluthiacet atrazine	<i>Zidua</i> <i>Cadet</i> <i>AAtrex</i>	15 14 5
ANTHEM FLEX	pyroxasulfone fluthiacet	<i>Zidua</i> <i>Cadet</i>	15 14
ANTHEM MAXX	pyroxasulfone fluthiacet	<i>Zidua</i> <i>Cadet</i>	15 14
ARMEZON PRO	trifloxysulfuron dimethenamid-P	<i>Osprey</i> <i>Outlook</i>	15 15
AUTHORITY ASSIST	sulfentrazone imazethapyr	<i>Spartan</i> <i>Pursuit</i>	14 2
AUTHORITY ELITE	sulfentrazone s-metolachlor	<i>Spartan</i> <i>Dual Magnum</i>	14 15
AUTHORITY FIRST	sulfentrazone cloransulam	<i>Spartan</i> <i>FirstRate</i>	14 2
AUTHORITY MTZ	sulfentrazone metribuzin	<i>Spartan</i> <i>Metribuzin</i>	14 5
AUTHORITY XL (Authority Max)	sulfentrazone chlorimuron	<i>Spartan</i> <i>Classic</i>	14 2
AUTUMN SUPER	iodosulfuron thiencarbazone	<i>Autumn</i> <i>Varro</i>	2 2
AXIAL STAR	pinoxaden fluroxypyr	<i>Axial XL</i> <i>Starane</i>	1 4
AXIOM	flufenacet metribuzin	<i>Define</i> <i>Metribuzin</i>	15 5
BASIS BLEND	rimsulfuron thifensulfuron	<i>Resolve</i> <i>Harmony</i>	2 2
BETAMIX	desmedipham phenmedipham	<i>Betenex</i> -----	5 5
BICEP II MAGNUM (Bicep Lite II Magnum)	s-metolachlor atrazine	<i>Dual II Magnum</i> <i>AAtrex</i>	15 5
BOUNDARY	s-metolachlor metribuzin	<i>Dual Magnum</i> <i>Metribuzin</i>	15 5
BRAKE F2	fomesafen	<i>Flexstar</i>	14
BREAKFREE NXT ATZ (Breakfree NXT Lite)	acetochlor atrazine	<i>Breakfree NXT</i> <i>AAtrex</i>	15 5
BROADAXE XC	s-metolachlor sulfentrazone	<i>Dual Magnum</i> <i>Spartan</i>	15 14
BROADHEAD	carfentrazone quinclorac	<i>Aim</i> <i>Facet</i>	14 4
BRONATE	bromoxynil MCPA	<i>Buctril</i> <i>MCPA</i>	6 4
CALLISTO GT	mesotrione glyphosate	<i>Callisto</i> <i>glyphosate</i>	27 9
CALLISTO XTRA	mesotrione atrazine	<i>Callisto</i> <i>AAtrex</i>	27 5
CANDOPY	chlorimuron metribuzin	<i>Classic</i> <i>Metribuzin</i>	2 5
CANDOPY EX	chlorimuron tribenuron	<i>Classic</i> <i>Express</i>	2 2
CAPRENO	thiencarbazone tembotrione	<i>Varro</i> <i>Laudis</i>	2 27
CARNIVORE	MCPA clopyralid bromoxynil	<i>MCPA</i> <i>Stinger</i> <i>Buctril</i>	4 4 6
CHEETAH MAX	glufosinate fomesafen	<i>Cheetah</i> <i>Reflex</i>	10 14
CINCH ATZ (Cinch ATZ Lite)	s-metolachlor atrazine	<i>Dual II Magnum</i> <i>AAtrex</i>	15 5
CLEARPATH	quinclorac imazethapyr	<i>Facet</i> <i>Newpath</i>	4 2
COLT + SALVO (Trump Card)	2,4-D fluroxypyr	<i>2,4-D</i> <i>Starane</i>	4 4
COLT + SWORD	MCPA fluroxypyr	<i>MCPA</i> <i>Starane</i>	4 4
CORVUS	thiencarbazone isoxaflutole	<i>Varro</i> <i>Balance Flexx</i>	2 27
CURTAL	clopyralid 2,4-D	<i>Stinger</i> <i>2,4-D</i>	4 4
CURTAL M	clopyralid MCPA	<i>Stinger</i> <i>MCPA</i>	4 4
DEGREE XTRA	acetochlor atrazine	<i>Degree</i> <i>AAtrex</i>	15 5
DIFLEX DUO	dicamba tembotrione	<i>DiFlexx</i> <i>Laudis</i>	4 27
DILIGENT*	chlorimuron rimsulfuron flumioxazin	<i>Classic</i> <i>Resolve</i> <i>Valor</i>	2 2 14
ENLIST DUO	2,4-D glyphosate	<i>2,4-D</i> <i>glyphosate</i>	4 9
ENLITE	thifensulfuron flumioxazin	<i>Harmony</i> <i>Valor</i>	2 14
ENVIVE	chlorimuron thifensulfuron	<i>Classic</i> <i>Harmony</i>	2 2
EXPERT	flumioxazin s-metolachlor atrazine	<i>Valor</i> <i>Dual Magnum</i> <i>AAtrex</i>	14 15 5
EXTREME	glyphosate imazethapyr glyphosate acetochlor	<i>glyphosate</i> <i>Pursuit</i> <i>glyphosate</i> <i>Harness</i>	9 2 9 15
FIELD MASTER	atrazine glyphosate	<i>AAtrex</i> <i>glyphosate</i>	5 9
FIERCE	flumioxazin pyroxasulfone	<i>Valor</i> <i>Zidua</i>	14 15
FIERCE XLT	flumioxazin pyroxasulfone chlorimuron	<i>Valor</i> <i>Zidua</i> <i>Classic</i>	14 15 2
FINESSE	chlorsulfuron metsulfuron	<i>Glean</i> <i>Ally</i>	2 2
FINESSE GRASS AND BROADLEAF	chlorsulfuron flucarbazone	<i>Glean</i> <i>Everest</i>	2 2
FLEXSTAR GT	fomesafen glyphosate	<i>Flexstar</i> <i>glyphosate</i>	14 9
FOREFRONT HL	aminopyralid 2,4-D	<i>Milestone</i> <i>2,4-D</i>	4 4
FOXFIRE	fenoxaprop pinoxaden	<i>Tecoma</i> <i>Axial XL</i>	1 1
FULTIME NXT	acetochlor atrazine	<i>TopNotch</i> <i>AAtrex</i>	15 5
FUSION	fluzifop fenoxaprop	<i>Fusilade DX</i> <i>Puma</i>	1 1
GANGSTER	flumioxazin cloransulam	<i>Valor</i> <i>FirstRate</i>	14 2
GOLDSKY	pyroxulam florasulam fluroxypyr	<i>PowerFlex HL</i> ----- <i>Starane</i>	2 2 4
HALEX GT	s-metolachlor mesotrione	<i>Dual Magnum</i> <i>Callisto</i>	15 27
	glyphosate	<i>glyphosate</i>	9
HARNES XTRA	acetochlor atrazine	<i>Harness</i> <i>AAtrex</i>	15 5
HORNET	clopyralid flumetsulam	<i>Stinger</i> <i>Python</i>	4 2
HUSKIE	pyrasulfotole pyrasulfotole	----- -----	27 27
HUSKIE COMPLETE	bromoxynil pyrasulfotole	<i>Buctril</i> -----	6 27
	thiencarbazone	<i>Varro</i>	2
INSTIGATE	rimsulfuron mesotrione	<i>Resolve, Matrix</i> <i>Callisto</i>	2 27
KEYSTONE NXT (Keystone LA NXT)	acetochlor atrazine	<i>Surpass NXT</i> <i>AAtrex</i>	15 5
KOCHIAVORE	2,4-D fluroxypyr bromoxynil	<i>2,4-D, others</i> <i>Starane</i> <i>Buctril, others</i>	4 4 6
LEADOFF	rimsulfuron s-metolachlor	<i>Resolve</i> <i>Dual II Magnum</i>	2 15
LEXAR EZ	atrazine mesotrione	<i>AAtrex</i> <i>Callisto</i>	5 27
LUMAX EZ	s-metolachlor atrazine	<i>Dual II Magnum</i> <i>AAtrex</i>	15 5
MARVEL	fluthiacet fomesafen	<i>Cadet</i> <i>Flexstar</i>	14 14
OBEGY	clomazone quinclorac	<i>Command</i> <i>Facet</i>	13 4
OPTILL	saflufenacil imazethapyr	<i>Sharpen</i> <i>Pursuit</i>	14 2
OPTILL PRO	saflufenacil imazethapyr dimethenamid-P	<i>Sharpen</i> <i>Pursuit</i> <i>Outlook</i>	14 2 15
ORION	florasulam MCPA	----- <i>MCPA</i>	2 4
PANOFLEX	thifensulfuron tribenuron	<i>Harmony</i> <i>Express</i>	2 2
PERMIT PLUS	thifensulfuron halosulfuron	<i>Harmony</i> <i>Permit</i>	2 2
PREFIX	s-metolachlor fomesafen	<i>Dual Magnum</i> <i>Reflex</i>	15 14
PREQUEL	rimsulfuron isoxaflutole	<i>Resolve</i> <i>Balance</i>	2 27
PROGRESS	desmedipham phenmedipham ethofumesate	<i>Betenex</i> ----- <i>Nartron</i>	5 5 14
PULSAR	dicamba fluroxypyr	<i>Clarity</i> <i>Starane</i>	4 4
QUELEX	halauxifen florasulam	<i>Arylex</i> -----	4 2
RAVE	triasulfuron dicamba	<i>Amber</i> <i>Clarity</i>	2 2
RAZE	flucarbazone fluroxypyr	<i>Everest</i> <i>Starane</i>	2 4
REALM D	rimsulfuron mesotrione	<i>Resolve</i> <i>Callisto</i>	2 27
REBELEX	cyhalofop penoxsulam	<i>Clincher</i> <i>Grasp</i>	1 2
RESICORE	clopyralid acetochlor	<i>Stinger</i> <i>Surpass NXT</i>	4 15
	mesotrione	<i>Callisto</i>	27
RESOLVE D	rimsulfuron thifensulfuron	<i>Resolve</i> <i>Harmony</i>	2 2
REVULIN D	nicosulfuron	<i>Accent Q</i>	2
RIMFIRE MAX	propoxycarbazone mesosulfuron	<i>Olympus</i> <i>Osprey</i>	2 2
ROUNDUP XTEND	glyphosate	<i>glyphosate</i>	9
ROWEL FX	flumioxazin chlorimuron	<i>Valor</i> <i>Classic</i>	14 2
SENTRALLAS	thifensulfuron fluroxypyr	<i>Harmony</i> <i>Starane</i>	2 4
SEQUENCE	s-metolachlor glyphosate	<i>Dual Magnum</i> <i>glyphosate</i>	15 9
SOLSTICE	mesotrione fluthiacet	<i>Callisto</i> <i>Cadet</i>	27 14
SONIC	sulfentrazone cloransulam	<i>Spartan</i> <i>FirstRate</i>	14 2
SPARTAN CHARGE	sulfentrazone carfentrazone	<i>Spartan</i> <i>Aim</i>	14 14
STANZA	clopyralid flumetsulam	<i>Stinger</i> <i>Python</i>	4 2
STARANE FLEX	florasulam fluroxypyr	----- <i>Starane</i>	2 4
STARANE NXT	fluroxypyr bromoxynil	<i>Starane</i> <i>Buctril</i>	4 6
STATUS	diffenozopyr	-----	19
STEADFAST D	nicosulfuron rimsulfuron	<i>Accent Q</i> <i>Resolve</i>	2 2
STORM	benzox acifluorfen	<i>Basagran</i> <i>Ultra Blazer</i>	6 14
	fluroxypyr	<i>Starane</i>	4
SUPREMACY	thifensulfuron tribenuron	<i>Harmony</i> <i>Express</i>	2 2
SUPREND	prometryn triflousulfuron	<i>Caporal</i> <i>Envoy</i>	5 2
	acetochlor	<i>Surpass NXT</i>	15
SURESTART II	clopyralid flumetsulam	<i>Stinger</i> <i>Python</i>	4 2
SURVEIL	flumioxazin cloransulam	<i>Valor</i> <i>FirstRate</i>	14 2
SYNCHRONY	chlorimuron thifensulfuron	<i>Classic</i> <i>Harmony</i>	2 2
TALINOR	bromoxynil bicyclopyrone	<i>Buctril</i> -----	6 27
TRAVALLAS	thifensulfuron fluroxypyr	<i>Harmony</i> <i>Starane</i>	2 4
	acetochlor	<i>Harness</i>	15
TRIPLEFLEX II	clopyralid flumetsulam	<i>Stinger</i> <i>Python</i>	4 2
TRIVENCE	chlorimuron flumioxazin	<i>Classic</i> <i>Valor</i>	2 14
VALOR XLT	flumioxazin chlorimuron	<i>Valor</i> <i>Classic</i>	14 2
VARIISTO	imazamox benzox	<i>Raptor</i> <i>Basagran</i>	2 6
VELPAR ALFAMAX	hexazinone diuron	<i>Velpar</i> <i>Karmex</i>	5 7
VERDICT	saflufenacil dimethenamid-P	<i>Sharpen</i> <i>Outlook</i>	14 15
WARRANT ULTRA	fomesafen acetochlor	<i>Reflex</i> <i>Warrant</i>	14 15
WELD (FULL DECK)	MCPA fluroxypyr	<i>MCPA</i> <i>Starane</i>	4 4
	clopyralid	<i>Stinger</i>	4
WIDEMATCH	clopyralid fluroxypyr	<i>Stinger</i> <i>Starane</i>	4 4
	fenoxaprop	<i>Tecoma</i> </	