

Corn and Soybean Herbicide Chart

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 herbicides with different sites of action to delay the development of herbicide resistance.

The Site of Action Group is a classification system developed by the Weed Science Society of America.

Site of Action Group	Site of Action	Number of resistant weed species in U.S.	Chemical Family	Active Ingredient	Product Examples (Trade Name [®])
1	ACCase Inhibitors (acetyl CoA carboxylase)	15	Aryloxyphenoxy propionate Cyclohexanedione	fenoxaprop fluzafop quizalofop clethodim sethoxydim	component of <i>Fusion</i> <i>Fusilade DX</i> <i>Assure II, Targa</i> <i>Select, Arrow</i> <i>Poast, Poast Plus</i>
2	ALS Inhibitors (acetolactate synthase)	44	Sulfonylurea	chlorimuron foramsulfuron halosulfuron iodosulfuron nicosulfuron primisulfuron prosulfuron rimsulfuron thifensulfuron tribenuron	<i>Classic</i> <i>Option</i> <i>Permit</i> <i>Autumn</i> <i>Accent Q</i> <i>Beacon</i> <i>Peak</i> <i>Resolve</i> <i>Harmony</i> <i>Express</i>
			Imidazolinone	imazamox imazaquin imazethapyr	<i>Raptor</i> <i>Scepter</i> <i>Pursuit</i>
			Triazolopyrimidine	flumetsulam cloransulam	<i>Python</i> <i>FirstRate</i>
			Triazolinones	thiencarbazon	component of <i>Capreno</i>
9	EPSP Synthase Inhibitor (5-enolpyruvyl-shikimate-3-phosphate)	13	None accepted	glyphosate	<i>Roundup, Touchdown,</i> others
4	Specific site unknown	10	Phenoxy	2,4-D	<i>Weedone</i> , others
			Benzoic acid	dicamba	<i>Banvel, Clarity</i> , others
			Carboxylic acid	clopyralid fluroxypyr	<i>Stinger</i> <i>Starane</i>
19	Auxin Transport	0	Semicarbazone	diflufenzopyr	component of <i>Status</i>
5	Photosystem II Inhibitors (different binding than 6 & 7)	24	Triazine	atrazine	<i>AAtrex</i> , others
			Triazinone	metribuzin	<i>Princep</i> <i>Sencor</i> , others
6	Photosystem II Inhibitors (different binding than 5 & 7)	1	Nitrile	bromoxynil	<i>Buctril, Moxy</i>
			Benzothiadiazole	bentazon	<i>Basagran</i>
7	Photosystem II Inhibitors (different binding than 5 & 6)	7	Ureas	linuron	<i>Lorox, Linex</i>
10	Glutamine Synthesis Inhibitor	None accepted	None accepted	glufosinate	<i>Liberty</i>
13	Diterpene Synthesis Inhibitor	1	Isoxazolidinone	clomazone	<i>Command</i>
27	HPPD Inhibitors	1	Isoxazole Pyrazolone Triketone	isoxaflutole topramezone mesotrione tembotrione	<i>Balance Flex</i> <i>Impact, Armezon</i> <i>Callisto</i> <i>Laudis</i>
14	PPO Inhibitors	2	Diphenylether	acifluorfen fomesafen lactofen	<i>Ultra Blazer</i> <i>Flexstar, Reflex</i> , others <i>Cobra, Phoenix</i>
			N-phenylphthalimide	flumiclorac flumioxazin	<i>Resource</i> <i>Valor</i>
			Aryl triazinone	sulfentrazone carfentrazone fluthiacet-ethyl saflufenacil	<i>Spartan</i> <i>Aim</i> <i>Cadet</i> <i>Sharpen</i>
22	Photosystem I Electron Diverter	5	Pyrimidinedione	paraquat	<i>Gramoxone Inteon</i>
3	Microtubule Inhibitors	6	Dinitroaniline	ethalfluralin pendimethalin trifluralin	<i>Sonalan</i> <i>Prowl H₂O</i> , others <i>Treflan</i> , others
8	Lipid Synthesis Inhibitors (not ACCase)	5	Thiocarbamate	butylate EPTC	<i>Sutan +</i> <i>Eradicane</i>
15	Long-chain Fatty Acid Inhibitor	1	Chloroacetamide	acetochlor alachlor metolachlor dimethenamid	<i>Degree, Harness, Surpass,</i> <i>Warrant</i> , others <i>Intro, Micro-Tech</i> <i>Dual II Magnum</i> , others <i>Outlook</i>
			Oxyacetamide	flufenacet	<i>Define</i>
			Pyrazole	pyroxasulfone	<i>Zidua</i>

* indicates product is not registered for use at the time of printing. Check for a label and MSDS at www.cdms.net to confirm status.

Glyphosate, Weeds, and Crop Series

GWC-3

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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 **Mode of Action** chart on the left for more information.

Premix Trade Name [®]	Trade Name [®]	Component Active Ingredient	Site of Action Group
Anthem	<i>Zidua</i>	pyroxasulfone	15
	<i>Cadet</i>	fluthiacet-ethyl	14
Authority Assist	<i>Spartan</i>	sulfentrazone	14
	<i>Pursuit</i>	imazethapyr	2
Authority First	<i>Spartan</i>	sulfentrazone	14
	<i>FirstRate</i>	cloransulam	2
Authority MTZ	<i>Spartan</i>	sulfentrazone	14
	<i>Sencor</i>	metribuzin	5
Authority XL	<i>Spartan</i>	sulfentrazone	14
	<i>Classic</i>	chlorimuron	2
Autumn Super	<i>Autumn</i>	iodosulfuron	2
	-----	thiencarbazon	2
Basis Blend	<i>Resolve</i>	rimsulfuron	2
	<i>Harmony</i>	thifensulfuron	2
Bicep II Magnum (Bicep Lite II Mag)	<i>Dual II Magnum</i>	s-metolachlor	15
	<i>AAtrex</i>	atrazine	5
Boundary	<i>Dual Magnum</i>	s-metolachlor	15
	<i>Sencor</i>	metribuzin	5
Breakfree ATZ (Breakfree ATZ Lite)	<i>Breakfree</i>	acetochlor	15
	<i>AAtrex</i>	atrazine	5
Bullet	<i>Micro-Tech</i>	alachlor	15
	<i>AAtrex</i>	atrazine	5
Callisto Xtra	<i>Callisto</i>	mesotrione	27
	<i>AAtrex</i>	atrazine	5
Canopy	<i>Classic</i>	chlorimuron	2
	<i>Sencor</i>	metribuzin	5
Canopy EX	<i>Classic</i>	chlorimuron	2
	<i>Express</i>	tribenuron	2
Capreno	-----	thiencarbazon	2
	<i>Laudis</i>	tembotrione	27
Cinch ATZ (Cinch ATZ Lite)	<i>Dual II Magnum</i>	s-metolachlor	15
	<i>AAtrex</i>	atrazine	5
Corvus	-----	thiencarbazon	2
	<i>Balance Flex</i>	isoxaflutole	27
Degree Xtra	<i>Degree</i>	acetochlor	15
	<i>AAtrex</i>	atrazine	5
Enlite	<i>Classic</i>	chlorimuron	2
	<i>Harmony</i>	thifensulfuron	2
	<i>Valor</i>	flumioxazin	14
Envive	<i>Classic</i>	chlorimuron	2
	<i>Harmony</i>	thifensulfuron	2
	<i>Valor</i>	flumioxazin	14
Expert	<i>Dual II Magnum</i>	s-metolachlor	15
	<i>AAtrex</i>	atrazine	5
	<i>glyphosate</i>	glyphosate	9
Externe	<i>Pursuit</i>	imazethapyr	2
	<i>glyphosate</i>	glyphosate	9
Fierce	<i>Valor</i>	flumioxazin	14
	<i>Zidua</i>	pyroxasulfone	15
Fierce XLT*	<i>Valor</i>	flumioxazin	14
	<i>Zidua</i>	pyroxasulfone	15
	<i>Classic</i>	chlorimuron	2
Flexstar GT	<i>Flexstar</i>	fomesafen	14
	<i>glyphosate</i>	glyphosate	9
Fusion	<i>Fusilade DX</i>	fluzafop	1
	<i>Puma</i>	fenoxaprop	1
Gangster	<i>Valor</i>	flumioxazin	14
	<i>FirstRate</i>	cloransulam	2
Guardsman Max (G-Max Lite)	<i>Outlook</i>	dimethenamid-P	15
	<i>AAtrex</i>	atrazine	5
Halex GT	<i>Dual Magnum</i>	s-metolachlor	15
	<i>Callisto</i>	mesotrione	27
	<i>glyphosate</i>	glyphosate	9
Harness Xtra	<i>Harness</i>	acetochlor	15
	<i>AAtrex</i>	atrazine	5
Hornet	<i>Stinger</i>	clopyralid	4
	<i>Python</i>	flumetsulam	2
Instigate	<i>Resolve</i>	rimsulfuron	2
	<i>Callisto</i>	mesotrione	27
Keystone (Keystone LA)	<i>Surpass</i>	acetochlor	15
	<i>AAtrex</i>	atrazine	5
Lexar EZ	<i>Callisto</i>	mesotrione	27
	<i>Dual II Magnum</i>	s-metolachlor	15
	<i>AAtrex</i>	atrazine	5
Lumax EZ	<i>Callisto</i>	mesotrione	27
	<i>Dual II Magnum</i>	s-metolachlor	15
	<i>AAtrex</i>	atrazine	5
Marksman	<i>Clarity</i>	dicamba	4
	<i>AAtrex</i>	atrazine	5
NorthStar	<i>Beacon</i>	primisulfuron	2
	<i>Clarity</i>	dicamba	4
Optill	<i>Sharpen</i>	saflufenacil	14
	<i>Pursuit</i>	imazethapyr	2
Permit Plus	<i>Harmony</i>	thifensulfuron	2
	<i>Permit</i>	halosulfuron	2
Priority	<i>Aim</i>	carfentrazone	14
	<i>Permit</i>	halosulfuron	2
Prefix	<i>Dual Magnum</i>	s-metolachlor	15
	<i>Reflex</i>	fomesafen	14
Prequel	<i>Resolve</i>	rimsulfuron	2
	<i>Balance Flex</i>	isoxaflutole	27
Pursuit Plus	<i>Pursuit</i>	imazethapyr	2
	<i>Prowl</i>	pendimethalin	3
Realm Q	<i>Resolve</i>	rimsulfuron	2
	<i>Callisto</i>	mesotrione	27
Resolve Q	<i>Resolve</i>	rimsulfuron	2
	<i>Harmony</i>	thifensulfuron	2
Require Q	<i>Resolve</i>	rimsulfuron	2
	<i>Clarity</i>	dicamba	4
Rezult	<i>Basagran</i>	bentazon	6
	<i>Poast</i>	sethoxydim	1
Sequence	<i>Dual Magnum</i>	s-metolachlor	15
	<i>glyphosate</i>	glyphosate	9
Shotgun	<i>AAtrex</i>	atrazine	5
	-----	2,4-D	4
Sonic	<i>Spartan</i>	sulfentrazone	14
	<i>FirstRate</i>	cloransulam	2
Spartan Charge	<i>Spartan</i>	sulfentrazone	14
	<i>Aim</i>	carfentrazone	14
Spirit	<i>Peak</i>	prosulfuron	2
	<i>Beacon</i>	primisulfuron	2
Status	-----	diflufenzopyr	19
	<i>Clarity</i>	dicamba	4
Steadfast Q	<i>Accent Q</i>	nicosulfuron	2
	<i>Resolve</i>	rimsulfuron	2
SureStart	<i>Surpass</i>	acetochlor	15
	<i>Stinger</i>	clopyralid	4
	<i>Python</i>	flumetsulam	2
Synchrony	<i>Classic</i>	chlorimuron	2
	<i>Harmony</i>	thifensulfuron	2
TripleFLEX	<i>Harness</i>	acetochlor	15
	<i>Stinger</i>	clopyralid	4
	<i>Python</i>	flumetsulam	2
Valor XLT	<i>Valor</i>	flumioxazin	14
	<i>Classic</i>	chlorimuron	2
Verdict	<i>Sharpen</i>	saflufenacil	14
	<i>Outlook</i>	dimethenamid-P	15
Widematch	<i>Stinger</i>	clopyralid	4
	<i>Starane</i>	fluroxypyr	4
Yukon	<i>Banvel</i>	dicamba	4
	<i>Permit</i>	halosulfuron	2
Zemax	<i>Callisto</i>	mesotrione	27
	<i>Dual II Magnum</i>	s-metolachlor	15

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