

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	fenoxaprop fluaazifop quizalofop	component of <i>Fusion</i> <i>Fusilade DX</i> <i>Assure II, Targa</i>
			Cyclohexanedione	clethodim sethoxydim	<i>Select, Arrow</i> <i>Poast, Poast Plus</i>
2	ALS Inhibitors (acetolactate synthase)	44	Sulfonylurea	chlorimuron foramsulfuron halosulfuron iodosulfuron nicosulfuron	<i>Classic</i> <i>Option</i> <i>Permit</i> <i>Autumn</i> <i>Accent Q</i>

Lipid Synthesis Inhibitors

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
		thiencarbazone	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	<i>Laudis</i>	thiencarbazone	2
		tembotrione	27
Cinch ATZ (Cinch ATZ Lite)	<i>Dual II Magnum</i>	s-metolachlor	15
	<i>AAtrex</i>	atrazine	5
Corvus	<i>Balance Flexx</i>	thiencarbazone	2
		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

Amino Acid Synthesis Inhibitors

9	EPSP Synthase Inhibitor (5-enolpyruvyl-shikimate-3-phosphate)	13	None accepted	glyphosate	Roundup, Touchdown, others
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Growth Regulators (Synthetic auxins)

4	Specific site unknown	10	Phenoxy	2,4-D	Weedone, others
			Benzoic acid	dicamba	Banvel, Clarity, others
			Carboxylic acid	clopyralid fluroxypyr	Stinger Starane
19	Auxin Transport	0	Semicarbazone	diflufenzopyr	component of Status

Photo-synthesis Inhibitors

5	Photosystem II Inhibitors (different binding than 6 & 7)	24	Triazine	atrazine simazine	AAtrex, others Princep
			Triazinone	metribuzin	Sencor, others
6	Photosystem II Inhibitors (different binding than 5 & 7)	1	Nitrile	bromoxynil	Buctril, Moxy
			Benzothiadiazole	bentazon	Basagran
7	Photosystem II Inhibitors (different binding than 5 & 6)	7	Ureas	linuron	Lorox, Linex

Nitrogen Metabolism

10	Glutamine Synthesis Inhibitor	None accepted		glufosinate	Liberty
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Pigment Inhibitors

13	Diterpene Synthesis Inhibitor	1	Isoxazolidinone	clomazone	Command
27	HPPD Inhibitors	1	Isoxazole	isoxaflutole	Balance Flexx

primisulfuron
prosulfuron
rimsulfuron
thifensulfuron
tribenuron

**Beacon
Peak
Resolve
Harmony
Express**

Imidazolinone

imazamox
imazaquin
imazethapyr

**Raptor
Scepter
Pursuit**

Triazolopyrimidine

flumetsulam
cloransulam
thiencarbazone

**Python
FirstRate**
component of **Capreno**

Triazolinones

Envive	Classic	chlorimuron	2	
	Harmony	thifensulfuron	2	
	Valor	flumioxazin	14	
Expert	Dual II Magnum	s-metolachlor	15	
	AAtrex	atrazine	5	
	glyphosate	glyphosate	9	
Exteme	Pursuit	imazethapyr	2	
	glyphosate	glyphosate	9	
Fierce	Valor	flumioxazin	14	
	Zidua	pyroxasulfone	15	
Fierce XLT*	Valor	flumioxazin	14	
	Zidua	pyroxasulfone	15	
	Classic	chlorimuron	2	
Flexstar GT	Flexstar	fomesafen	14	
	glyphosate	glyphosate	9	
Fusion	Fusilade DX	fluazifop	1	
	Puma	fenoxaprop	1	
Gangster	Valor	flumioxazin	14	
	FirstRate	cloransulam	2	
Guardsman Max (G-Max Lite)	Outlook	dimethenamid-P	15	
	AAtrex	atrazine	5	
Halex GT	Dual Magnum	s-metolachlor	15	
	Callisto	mesotrione	27	
	glyphosate	glyphosate	9	
Harness Xtra	Harness	acetochlor	15	
	AAtrex	atrazine	5	
Hornet	Stinger	clopyralid	4	
	Python	flumetsulam	2	
Instigate	Resolve	rimsulfuron	2	
	Callisto	mesotrione	27	
Keystone (Keystone LA)	Surpass	acetochlor	15	
	AAtrex	atrazine	5	
Lexar EZ	Callisto	mesotrione	27	
	Dual II Magnum	s-metolachlor	15	
	AAtrex	atrazine	5	
Lumax EZ	Callisto	mesotrione	27	
	Dual II Magnum	s-metolachlor	15	
	AAtrex	atrazine	5	
Marksman	Clarity	dicamba	4	
	AAtrex	atrazine	5	
NorthStar	Beacon	primisulfuron	2	
	Clarity	dicamba	4	
Optill	Sharpen	saflufenacil	14	
	Pursuit	imazethapyr	2	
Permit Plus	Harmony	thifensulfuron	2	
	Permit	halosulfuron	2	
Priority	Aim	carfentrazone	14	
	Permit	halosulfuron	2	
Prefix	Dual Magnum	s-metolachlor	15	
	Reflex	fomesafen	14	

Cell Membrane Disrupters

14

PPO Inhibitors

2

Pyrazolone Triketone	topramezone mesotrione tembotrione	Impact, Armezon Callisto Laudis
Diphenylether	acifluorfen fomesafen lactofen	Ultra Blazer Flexstar, Reflex, others Cobra, Phoenix

22

Photosystem I Electron Diverter

5

N-phenylphthalimide	flumiclorac flumioxazin	Resource Valor
Aryl triazinone	sulfentrazone carfentrazone fluthiacet-ethyl saflufenacil	Spartan Aim Cadet Sharpen
Pyrimidinedione	paraquat	Gramoxone Inteon

3

Microtubule Inhibitors

6

Dinitroaniline	ethalfluralin pendimethalin trifluralin	Sonalan Prowl H₂O, others Treflan, others
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8

Lipid Synthesis Inhibitors (not ACCase)

5

Thiocarbamate	butylate EPTC	Sutan + Eradicane
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15

Long-chain Fatty Acid Inhibitor

1

Chloroacetamide	acetochlor alachlor metolachlor dimethenamid	Degree, Harness, Surpass, Warrant, others Intro, Micro-Tech Dual II Magnum, others Outlook
Oxyacetamide	flufenacet	Define
Pyrazole	pyroxasulfone	Zidua

Seedling Root Growth Inhibitors

Seedling Shoot Growth Inhibitors

* 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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Prequel	Resolve Balance Flexx	rimsulfuron isoxaflutole	2 27	
Pursuit Plus	Pursuit Prowl	imazethapyr pendimethalin	2 3	
Realm Q	Resolve Callisto	rimsulfuron mesotrione	2 27	
Resolve Q	Resolve Harmony	rimsulfuron thifensulfuron	2 2	
Require Q	Resolve Clarity	rimsulfuron dicamba	2 4	
Rezult	Basagran Poast	bentazon sethoxydim	6 1	
Sequence	Dual Magnum glyphosate	s-metolachlor glyphosate	15 9	
Shotgun	AAtrex -----	atrazine 2,4-D	5 4	
Sonic	Spartan FirstRate	sulfentrazone cloransulam	14 2	
Spartan Charge	Spartan Aim	sulfentrazone carfentrazone	14 14	
Spirit	Peak Beacon	prosulfuron primisulfuron	2 2	
Status	----- Clarity	diflufenopyr dicamba	19 4	
Steadfast Q	Accent Q Resolve	nicosulfuron rimsulfuron	2 2	
SureStart	Surpass Stinger Python	acetochlor clopyralid flumetsulam	15 4 2	
Synchrony	Classic Harmony	chlorimuron thifensulfuron	2 2	
TripleFLEX	Harness Stinger Python	acetochlor clopyralid flumetsulam	15 4 2	
Valor XLT	Valor Classic	flumioxazin chlorimuron	14 2	
Verdict	Sharpen Outlook	saflufenacil dimethenamid-P	14 15	
Widematch	Stinger Starane	clopyralid fluroxypyr	4 4	
Yukon	Banvel Permit	dicamba halosulfuron	4 2	
Zemax	Callisto Dual II Magnum	mesotrione s-metolachlor	27 15	

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