

# 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.

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## 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.

	Site of Action Group*	Site of Action	Number of resistant weed species in U.S.	Chemical Family	Active Ingredient	Product Examples (Trade Name ®)
Lipid Synthesis Inhibitors	1	ACCase Inhibitors (acetyl CoA carboxylase)	15	Aryloxyphenoxy propionate	fenoxaprop fluazifop quizalofop	component of <b>Fusion</b> <b>Fusilade DX</b> <b>Assure II, Targa</b>
				Cyclohexanedione	clethodim sethoxydim	<b>Select, Arrow</b> <b>Poast, Poast Plus</b>
Amino Acid Synthesis Inhibitors	2	ALS Inhibitors (acetolactate synthase)	38	Sulfonylurea	chlorimuron foramsulfuron halosulfuron iodosulfuron nicosulfuron	<b>Classic</b> <b>Option</b> <b>Permit</b> <b>Autumn</b> <b>Accent</b>

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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 for more information.

Premix Trade Name ®	Trade Name ®	Component Active Ingredient	Site of Action Group*
Authority First .....	<b>Spartan</b> <b>FirstRate</b>	sulfentrazone cloransulam	14 2
Axiom .....	<b>Define</b> <b>Sencor</b>	flufenacet metribuzin	15 5
Basis .....	<b>Resolve</b> <b>Harmony GT</b>	rimsulfuron thifensulfuron	2 2
Bicep II Magnum .....	<b>Dual II Magnum</b> <b>AAtrex</b>	s-metolachlor atrazine	15 5
Bicep Lite II Magnum....	<b>Dual II Magnum</b> <b>AAtrex</b>	s-metolachlor atrazine	15 5
Boundary .....	<b>Dual Magnum</b> <b>Sencor</b>	s-metolachlor metribuzin	15 5
Breakfree ATZ.....	<b>Breakfree</b>	acetochlor atrazine	15 5
Breakfree ATZ Lite .....	<b>Breakfree</b>	acetochlor atrazine	15 5
Buctril + Atrazine .....	<b>Buctril</b>	bromoxynil atrazine	6 5
Bullet .....	<b>Micro-Tech</b>	alachlor atrazine	15 5
Camix .....	<b>Callisto</b> <b>Dual II Magnum</b>	mesotrione s-metolachlor	28 15
Canopy DF .....	<b>Classic</b> <b>Sencor</b>	chlorimuron metribuzin	2 5
Canopy EX .....	<b>Classic</b> <b>Express</b>	chlorimuron tribenuron	2 2
Celebrity Plus .....	diflufenzopyr <b>Clarity</b> <b>Accent</b>	diflufenzopyr dicamba nicosulfuron	19 4 2
Cinch ATZ .....	<b>Dual II Magnum</b> <b>AAtrex</b>	s-metolachlor atrazine	15 5
Cinch ATZ Lite .....	<b>Dual II Magnum</b> <b>AAtrex</b>	s-metolachlor atrazine	15 5

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## Amino Acid Synthesis Inhibitors

<b>9</b>	<b>EPSP Synthase Inhibitor</b> (5-enolpyruvyl-shikimate-3-phosphate)	<b>7</b>	None accepted	glyphosate	<b>Roundup, Touchdown, others</b>
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<b>4</b>	<b>Specific site unknown</b>	<b>7</b>	Phenoxy	2,4-D	<b>Weedone, others</b>
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			Benzoic acid	dicamba	<b>Banvel, Clarity</b>
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<b>19</b>	<b>Auxin Transport</b>	<b>0</b>	Semicarbazone	diflufenzopyr	component of <b>Distinct</b>
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<b>5</b>	<b>Photosystem II Inhibitors</b> (different binding than 6 & 7)	<b>22</b>	Triazine	atrazine simazine metribuzin	<b>AAtrex, others</b> <b>Princep</b> <b>Sencor</b>
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<b>6</b>	<b>Photosystem II Inhibitors</b> (different binding than 5 & 7)	<b>1</b>	Nitrile	bromoxynil	<b>Buctril, others</b>
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<b>7</b>	<b>Photosystem II Inhibitors</b> (different binding than 5 & 6)	<b>7</b>	Benzothiadiazole	bentazon	<b>Basagran</b>
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<b>10</b>	<b>Glutamine Synthase Inhibitor</b>	<b>0</b>	None accepted	glufosinate	<b>Liberty</b>
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<b>13</b>	<b>Diterpene Synthase Inhibitor</b>	<b>0</b>	Isoxazolidinone	clomazone	<b>Command</b>
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## Growth Regulators (Synthetic auxins)

## Photo-synthesis Inhibitors

## Nitrogen Metabolism

## Pigment Inhibitors

primisulfuron  
prosulfuron  
rimsulfuron  
thifensulfuron  
tribenuron

**Beacon**  
component of **Spirit**  
**Resolve**  
**Harmony GT**  
**Express**

**Raptor**  
**Scepter**  
**Pursuit**

**Python**  
**FirstRate**

**Roundup, Touchdown, others**

**Weedone, others**

**Banvel, Clarity**

**Stinger**  
**Starane**

component of **Distinct**

**AAtrex, others**  
**Princep**  
**Sencor**

**Buctril, others**

**Basagran**

**Lorox, Linex**

**Liberty**

**Command**

Degree Xtra .....	<b>Degree</b>	acetochlor	<b>15</b>	
	atrazine	atrazine	<b>5</b>	
Distinct .....	diflufenzopyr	diflufenzopyr	<b>19</b>	
	<b>Clarity</b>	dicamba	<b>4</b>	
Domain .....	<b>Define</b>	flufenacet	<b>15</b>	
	<b>Sencor</b>	metribuzin	<b>5</b>	
Equip .....	<b>Option</b>	foramsulfuron	<b>2</b>	
	<b>Autumn</b>	iodosulfuron	<b>2</b>	
Expert .....	<b>Dual II Magnum</b>	s-metolachlor	<b>15</b>	
	<b>AAtrex</b>	atrazine	<b>5</b>	
	glyphosate	glyphosate	<b>9</b>	
Exteme .....	<b>Pursuit</b>	imazethapyr	<b>2</b>	
	glyphosate	glyphosate	<b>9</b>	
Field Master .....	<b>Harness</b>	acetochlor	<b>15</b>	
	atrazine	atrazine	<b>5</b>	
	glyphosate	glyphosate	<b>9</b>	
FulTime .....	<b>TopNotch</b>	acetochlor	<b>15</b>	
	atrazine	atrazine	<b>5</b>	
Fusion .....	<b>Fusilade DX</b>	fluazifop	<b>1</b>	
	<b>Puma</b>	fenoxaprop	<b>1</b>	
Gangster .....	<b>Valor</b>	flumioxazin	<b>14</b>	
	<b>FirstRate</b>	cloransulam	<b>2</b>	
G-Max Lite .....	<b>Outlook</b>	dimethenamid-P	<b>15</b>	
	atrazine	atrazine	<b>5</b>	
Guardsman Max .....	<b>Outlook</b>	dimethenamid-P	<b>15</b>	
	atrazine	atrazine	<b>5</b>	
Harness Xtra .....	<b>Harness</b>	acetochlor	<b>15</b>	
	atrazine	atrazine	<b>5</b>	
Hornet .....	<b>Stinger</b>	clopyralid	<b>4</b>	
	<b>Python</b>	flumetsulam	<b>2</b>	
Keystone .....	<b>Surpass</b>	acetochlor	<b>15</b>	
	atrazine	atrazine	<b>5</b>	
Keystone LA .....	<b>Surpass</b>	acetochlor	<b>15</b>	
	atrazine	atrazine	<b>5</b>	
Laddok .....	<b>Basagran</b>	bentazon	<b>6</b>	
	atrazine	atrazine	<b>5</b>	
Lexar .....	<b>Callisto</b>	mesotrione	<b>28</b>	
	<b>Dual II Magnum</b>	s-metolachlor	<b>15</b>	
	<b>AAtrex</b>	atrazine	<b>5</b>	
Lightning .....	<b>Pursuit</b>	imazethapyr	<b>2</b>	
	<b>Arsenal</b>	imazapyr	<b>2</b>	
Lumax .....	<b>Callisto</b>	mesotrione	<b>28</b>	
	<b>Dual II Magnum</b>	s-metolachlor	<b>15</b>	
	<b>Aatrex</b>	atrazine	<b>5</b>	
Marksman .....	<b>Banvel</b>	dicamba	<b>4</b>	
	atrazine	atrazine	<b>5</b>	

**Pigment Inhibitors**

**28**

**HPPD Inhibitors**

**0**

Isoxazole isoxaflutole  
 Triketone mesotrione  
 tembotrione  
 topramezone

**Balance Pro**  
  
**Callisto**  
**Laudis**  
**Impact**

**14**

**PPO Inhibitors**

**2**

Diphenylether acifluorfen  
 fomesafen  
 lactofen  
  
 N-phenylphthalimide flumiclorac  
 flumioxazin  
  
 Aryl triazinone sulfentrazone  
 carfentrazone

**Ultra Blazer**  
**Flexstar, Reflex**  
**Cobra, Phoenix**  
  
**Resource**  
**Valor SX**  
  
**Spartan**  
**Aim**

**22**

**Photosystem I Electron Diverter**

**4**

Bipyridilium paraquat

**Gramoxone Inteon**

**3**

**Microtubule Inhibitors**

**6**

Dinitroaniline ethalfluralin  
 pendimethalin  
 trifluralin

**Sonalan**  
**Prowl**, others  
**Treflan**, others

**8**

**Lipid Synthesis Inhibitors**  
 (not ACCase)

**5**

Thiocarbamate butylate  
 EPTC

**Sutan +**  
**Eradicane**

**15**

**Long-chain Fatty Acid Inhibitor**

**1**

Chloroacetamide acetochlor  
  
 alachlor  
 metolachlor  
 dimethenamid  
  
 Oxyacetamide flufenacet

**Harness, TopNotch,**  
**Degree**, others  
**Intro, Micro-Tech**  
**Dual II Magnum**, others  
**Outlook, Propel**  
  
**Define**

**Cell Membrane Disrupters**

**Seedling Root Growth Inhibitors**

**Seedling Shoot Growth Inhibitors**

\* **Site of Action Group** is a classification system developed by the Weed Science Society of America

NorthStar .....	<b>Beacon</b>	primisulfuron	<b>2</b>	
	<b>Clarity</b>	dicamba	<b>4</b>	
Parallel Plus.....	<b>Parallel</b>	metolachlor	<b>15</b>	
	atrazine	atrazine	<b>5</b>	
Priority .....	<b>Aim</b>	carfentrazone	<b>14</b>	
	<b>Permit</b>	halosulfuron	<b>2</b>	
Prefix .....	<b>Dual Magnum</b>	s-metolachlor	<b>15</b>	
	<b>Reflex</b>	fomesafen	<b>14</b>	
Pursuit Plus .....	<b>Pursuit</b>	imazethapyr	<b>2</b>	
	<b>Prowl</b>	pendimethalin	<b>3</b>	
Radius .....	<b>Define</b>	flufenacet	<b>15</b>	
	<b>Balance Pro</b>	isoxaflutole	<b>28</b>	
Sequence .....	<b>Dual Magnum</b>	s-metolachlor	<b>15</b>	
	glyphosate	glyphosate	<b>9</b>	
Shotgun .....	atrazine	atrazine	<b>5</b>	
	<b>Salvo</b>	2,4-D	<b>4</b>	
Sonic.....	<b>Spartan</b>	sulfentrazone	<b>14</b>	
	<b>FirstRate</b>	cloransulam	<b>2</b>	
Spirit .....	<b>Peak</b>	prosulfuron	<b>2</b>	
	<b>Beacon</b>	primisulfuron	<b>2</b>	
Stalwart Xtra .....	<b>Stalwart C</b>	metolachlor	<b>15</b>	
	atrazine	atrazine	<b>5</b>	
Status .....	diflufenzopyr	diflufenzopyr	<b>19</b>	
	<b>Clarity</b>	dicamba	<b>4</b>	
Steadfast .....	<b>Accent</b>	nicosulfuron	<b>2</b>	
	<b>Resolve</b>	rimsulfuron	<b>2</b>	
Steadfast ATZ .....	<b>Accent</b>	nicosulfuron	<b>2</b>	
	<b>Resolve</b>	rimsulfuron	<b>2</b>	
	atrazine	atrazine	<b>5</b>	
Stout .....	<b>Accent</b>	nicosulfuron	<b>2</b>	
	<b>Harmony GT</b>	thifensulfuron	<b>2</b>	
SureStart .....	<b>Surpass</b>	acetochlor	<b>15</b>	
	<b>Stinger</b>	clopyralid	<b>4</b>	
	<b>Python</b>	flumetsulam	<b>2</b>	
Synchrony .....	<b>Classic</b>	chlorimuron	<b>2</b>	
	<b>Harmony GT</b>	thifensulfuron	<b>2</b>	
Valor XLT .....	<b>Valor</b>	flumioxazin	<b>14</b>	
	<b>Classic</b>	chlorimuron	<b>2</b>	
Volley ATZ.....	<b>Volley</b>	acetochlor	<b>15</b>	
	atrazine	atrazine	<b>5</b>	
Volley ATZ Lite.....	<b>Volley</b>	acetochlor	<b>15</b>	
	atrazine	atrazine	<b>5</b>	
Yukon.....	<b>Banvel</b>	dicamba	<b>4</b>	
	<b>Permit</b>	halosulfuron	<b>2</b>	

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Distributed by weed scientists from 16 North Central Universities, who are working on weed management in glyphosate-resistant cropping systems. For information about obtaining copies of this publication and other resources, see [www.glyphosateweeds crops.org](http://www.glyphosateweeds crops.org)  
 Financial support for printing provided by BASF, Bayer CropScience, Dow AgroSciences, DuPont, Monsanto, Syngenta, and Valent USA. I-5-2007-31K

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 College of Agricultural and Life Sciences.  
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The layout for this publication was provided by the University of Wisconsin's Nutrient and Pest Management (NPM) Program. [ipcm.wisc.edu](http://ipcm.wisc.edu)