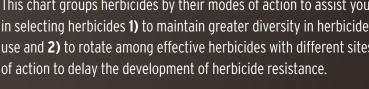
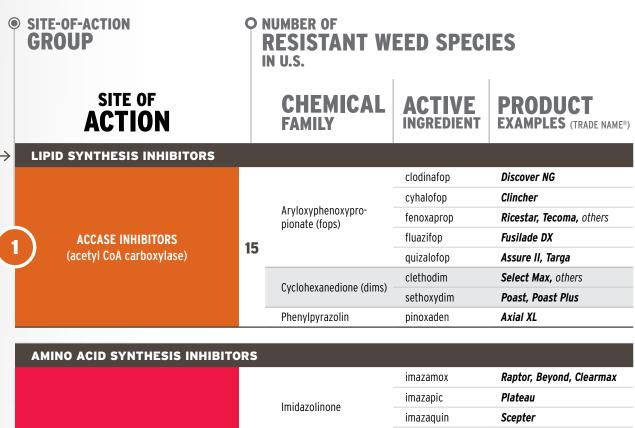
REPEATED USE OF HERBICIDES WITH THE SAME SITE OF ACTION CAN RESULT IN THE DEVELOPMENT OF HERBICIDE-RESISTANT WEED POPULATIONS.



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.





				imazamox	Raptor, Beyond, Clearmax
			Imidazolinone	imazapic	Plateau
	ALS INHIBITORS (acetolactate synthase)		iiiiddzoiiiioiic	imazaquin	Scepter
				imazethapyr	Pursuit, Newpath
			Pyrimidinylthiobenzoic	bispyribac	Regiment
			acid	pyrithiobac	Staple
			0.16	flucarbazone	Everest, Pre-Pare, Sierra
			Sulfonylaminocarbonyl- triazolinones	propoxycarbazone	Olympus
				thiencarbazone	Varro
				bensulfuron	Londax
				chlorimuron	Classic
				chlorsulfuron	Glean
				halosulfuron	Permit
				iodosulfuron	Autumn
		metsulfuron Ally nicosulfuron Acce		mesosulfuron	Osprey
2	ALS INHIBITORS		Ally		
2				nicosulfuron	Accent Q, Zest*
			Sulfonylurea	orthosulfamuron	Strada
				primisulfuron	Beacon
				prosulfuron	Peak
				rimsulfuron	Resolve, Matrix
				sulfosulfuron	Maverick
				thifensulfuron	Harmony
				triasulfuron	Amber
				tribenuron	Express
				trifloxysulfuron	Envoke
				triflusulfuron	UpBeet
		ľ		cloransulam	FirstRate
				florasulam	component of <b>Orion</b>
			Triazolopyrimidine	flumetsulam	Python, Accolade
				penoxsulam	Grasp
				pyroxsulam	PowerFlex HL
9	EPSP SYNTHASE INHIBITOR (5-enolpyruvyl-shikimate- 3-phosphate)	15	Organophosphorus	glyphosate	<b>Roundup, Touchdown,</b> several

	GROWTH REGULATORS				
			Arylpicolinate	halauxifen	Arylex*
		8	Benzoic acid	dicamba	Banvel, Clarity, DiFlexx, Engenia*, XtendiMax*, others
			Carboxylic acid	aminopyralid	Milestone
4	TIR1 AUXIN RECEPTORS			clopyralid	Stinger
	(synthetic auxins)			fluroxypyr	Starane
				triclopyr	Grandstand
				quinclorac	Facet
			Dhanassis	2,4-D	<b>2,4-D,</b> others
			Phenoxy	MCPA	MCPA, others
19	AUXIN TRANSPORT INHIBITOR	0	Semicarbazone	diflufenzopyr	component of <b>Status</b>
	PHOTOSYNTHESIS INHIBITORS				

PH	IOTOSYNTHESIS INHIBITORS				
			Phenylcarbamate	desmedipham	Betenex
				phenmedipham	component of <b>Betamix</b>
			Triazine	atrazine	AAtrex, others
5	PHOTOSYSTEM II INHIBITORS (different binding than 6 & 7)	26		prometryn	Caparol
		20		simazine	Princep
			Triazinone	hexazinone	Velpar
				metribuzin	Metribuzin, others
			Uracil	terbacil	Sinbar
	PHOTOSYSTEM II INHIBITORS	١,	Benzothiadiazole	bentazon	Basagran, others
	(different binding than 5 & 7)	<b>'</b>	Nitrile	bromoxynil	Buctril, others
			Amide	propanil	SuperWham
	PHOTOSYSTEM II INHIBITORS		Urea	diuron	Direx, Karmex
ノ	(different binding than 5 & 6)	9		fluometuron	Cotoran
				linuron	Lorox, Linex

0)	GLUTAMINE SYNTHETASE INHIBITOR	1	Organophosphorus	glufosinate	Liberty
PI	GMENT INHIBITORS				
2)	PHYTOENE DESATURASE (PDS) INHIBITOR	1	none recognized	fluridone	Sonar
3)	DOXP SYNTHASE INHIBITOR (1-DEOXY-D-XYULOSE 5-PHOSPHATE)	1	Isoxazolidinone	clomazone	Command
			Isoxazole	isoxaflutole	Balance Flexx
			Pyrazole	pyrasulfotole	component of <b>Huskie</b>
-	UDDD INIUDITODS	2	Pyrazolone	topramezone	Armezon, Impact
リ	HPPD INHIBITORS	2	Triketone	mesotrione	Callisto
				tembotrione	Laudis
				bicyclopyrone	component of <b>Acuron</b>

			HIRELOHE	terribotrione	Lauuis
				bicyclopyrone	component of <b>Acuron</b>
				,	
CEL	L MEMBRANE DISRUPTERS	5			
				sulfentrazone	Spartan
			Aryl triazinone	carfentrazone	Aim
				fluthiacet	Cadet
				acifluorfen	Ultra Blazer
(14)	PPO INHIBITORS	3	Diphenylether	fomesafen	Flexstar, Reflex, others
				lactofen	Cobra, Phoenix
			N abandahibalinida	flumiclorac	Resource
			N-phenylphthalimide	flumioxazin	Valor, Rowel
			Pyrimidinedione	saflufenacil	Sharpen
22	PHOTOSYSTEM I	5	Pinyridylium	diquat	Regione
42)	ELECTRON DIVERTER	Э	Bipyridylium	paraquat	Gramoxone SL
SEE	DLING ROOT GROWTH INHI	HIBITORS			

		Benzamide	pronamide	Kerb
MICROTURIU E INIURITARE			ethalfluralin	Sonalan
MICROTUBULE INHIBITORS	6	Dinitroaniline	pendimethalin	<b>Prowl H₂O,</b> others
			trifluralin	Treflan, others
SEEDLING SHOOT GROWTH INHIB	ITOR	S		
			butylate	Sutan +
			cycloate	Ro-Neet
LIPID SYNTHESIS INHIBITOR (not ACCase)	5	Thiocarbamate	EPTC	Eradicane, Eptam
(HUL ACCASE)			thiobencarb	Bolero
			triallate	Far-Go
		Chloroacetamide	acetochlor	Degree, Harness, Surpass NXT, Topnotch, Warrant, others
			alachlor	Intrro, Micro-Tech
LONG-CHAIN FATTY ACID	1		s-metolachlor	Dual Magnum, others
INHIBITORS			dimethenamid-P	Outlook
		Oxyacetamide	flufenacet	Define
		Pyrazole	pyroxasulfone	Zidua
SPECIFIC SITE UNKNOWN	0	Benzofurane	ethofumesate	Nortron

For more information and links to additional resources, visit

1 Arsenical

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NUCLEIC ACID INHIBITOR

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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**on** chart on the left for more information.

COMPONENT —

			nd t f-Ac					
Г	COMPONENT —							
	SITE-OF-ACTION © GROUP							
PREMIX	ACTIVE INGREDIENT	TRADE NAME®						
ACURON -	bicyclopyrone mesotrione atrazine	 Callisto AAtrex	27 27 5					
Acuron Flexi*	s-metolachlor bicyclopyrone mesotrione	Dual II Magnum Callisto	(15) (27)					
AFFINITY BROADSPEC	s-metolachlor thifensulfuron	Dual II Magnum Harmony	15					
(Affinity Tankmix)	tribenuron thifensulfuron	Express Harmony	2					
AFFORIA	tribenuron flumioxazin dicamba	Express Valor Clarity	14					
AGILITY SG	thifensulfuron tribenuron	Harmony Express	2					
ALLY EXTRA	metsulfuron thifensulfuron tribenuron	Ally Harmony Express	2					
ALLI LATINA	metsulfuron pyroxasulfone	Ally Zidua	2 15					
ANTHEM ATZ	fluthiacet atrazine	Cadet AAtrex	5					
ANTHEM FLEX	pyroxasulfone carfentrazone pyroxasulfone	Zidua Aim Zidua	14					
ARMEZON PRO	fluthiacet tropramezone	Cadet Armezon	14 27					
AUTHORITY ASSIST	dimethenamid-P sulfentrazone imazethapyr	Outlook Spartan Pursuit	15					
AUTHORITY ELITE -	sulfentrazone s-metolachlor	Spartan Dual Magnum	14					
AUTHORITY FIRST -	sulfentrazone cloransulam	Spartan FirstRate	2					
AUTHORITY MTZ	sulfentrazone metribuzin sulfentrazone	Spartan Metribuzin Spartan	5					
AUTHORITY XL (Authority Maxx)	chlorimuron iodosulfuron	Spartan Classic Autumn	2					
AUTUMN SUPER -	thiencarbazone pinoxaden	Varro Axial XL	2					
BASIS BLEND -	fluroxypyr rimsulfuron thifensulfuron	Starane Resolve Harmony	2					
BETAMIX -	desmedipham phenmedipham	Betenex	5					
BICEP II MAGNUM (Bicep Lite II Magnum)	s-metolachlor atrazine	Dual II Magnum AAtrex	(E)					
BOUNDARY	s-metolachlor metribuzin fomesafen	Dual Magnum Metribuzin Flexstar	5					
BREAKFREE NXT ATZ	fluridone acetochlor	Sonar Breakfree NXT	12					
(Breakfree NXT Lite)  BROADAXE	atrazine s-metolachlor	AAtrex Dual Magnum	[5] [15]					
BROADHEAD -	sulfentrazone carfentrazone quinclorac	Spartan Aim Facet	14					
BRONATE	bromoxynil MCPA	Buctril MCPA	6					
BULLET -	alachlor atrazine	Micro-Tech AAtrex	(15) (5)					
CALLISTO GT -	mesotrione glyphosate mesotrione	Callisto glyphosate Callisto	9					
CALLISTO XTRA	atrazine chlorimuron	AAtrex Classic	5					
CANOPY –	metribuzin chlorimuron	Metribuzin Classic	5					
CAPRENO -	tribenuron thiencarbazone tembotrione	Express Varro Laudis	2					
CARNIVORE	MCPA clopyralid	MCPA Stinger	4					
CINCH ATZ	bromoxynil s-metolachlor	Buctril Dual II Magnum	<b>6 15</b>					
(Cinch ATZ Lite)  CLEARPATH	atrazine quinclorac imazethapyr	AAtrex Facet Newpath	4					
COLT + SALVO (Trump Card)	2,4-D fluroxypyr	2,4-D Starane	4					
COLT + SWORD	MCPA fluroxypyr	MCPA Starane	4					
CORVUS -	thiencarbazone isoxaflutole clopyralid	Varro  Balance Flexx  Stinger	27					
CURTAIL M -	2,4-D clopyralid	2,4-D Stinger	4					
DEGREE XTRA	MCPA acetochlor	MCPA Degree	15					
DIFLEXX DUO*	atrazine dicamba tembotrione	AAtrex DiFlexx Laudis	4 27					
DILIGENT*	chlorimuron rimsulfuron	Classic Resolve	2					
ENLIST DUO -	flumioxazin 2,4-D glyphosate	Valor 2,4-D glyphosate	4					
ENLITE	chlorimuron thifensulfuron	glyphosate Classic Harmony	2					
-	flumioxazin	Valor Classic	14					
ENVIVE	thifensulfuron flumioxazin s-metolachlor	Harmony Valor Dual Magnum	14					
EXPERT	atrazine glyphosate	AAtrex glyphosate	5					
EXTREME	imazethapyr glyphosate	Pursuit glyphosate	9					
FIELD MASTER	acetochlor atrazine glyphosate	Harness AAtrex glyphosate	<b>15 5 9</b>					
FIERCE -	flumioxazin pyroxasulfone	Valor Zidua	14					
FIERCE XLT	flumioxazin pyroxasulfone	Valor Zidua	15					
FINESSE -	chlorimuron chlorsulfuron metsulfuron	Classic Glean Ally	2 2					
FINESSE GRASS AND BROADLEAF	chlorsulfuron flucarbazone	Glean Everest	2					
FLEXSTAR GT	fomesafen glyphosate	Flexstar glyphosate	9					
FOREFRONT HL	aminopyralid 2,4-D fenoxaprop	Milestone 2,4-D Tecoma	4					
FULLTIME NYT	pinoxaden acetochlor	Axial XL TopNotch	15					
FUSION -	atrazine fluazifop	AAtrex Fusilade DX	5					
GANGSTER	fenoxaprop flumioxazin cloransulam	Puma Valor FirstRate	14					
GOLDSKY	pyroxsulam florasulam	FirstRate  PowerFlex HL	2					
GUARDSMAN MAX	fluroxypyr dimethenamid-P	Starane Outlook	4					
(G-Max Lite)	s-metolachlor	AAtrex Dual Magnum Callisto	15					
HALEX GT	mesotrione glyphosate	Callisto glyphosate	9					

	31	GROUP	
PREMIX	ACTIVE INGREDIENT	TRADE NAME®	
HARNESS XTRA	acetochlor atrazine	Harness AAtrex	
HORNET	clopyralid flumetsulam	Stinger Python	
HUSKIE	pyrasulfotole bromoxynil	 Buctril	2
THISKIE COMDI ETE	pyrasulfotole	 Buctril	2
HUSKIE COMPLETE	thiencarbazone	Varro	
INSTIGATE	rimsulfuron mesotrione	Resolve, Matrix Callisto	2
KEYSTONE NXT (Keystone LA NXT)	acetochlor atrazine	Surpass NXT AAtrex	
KOCHIAVORE	2,4-D fluroxypyr	2,4-D, others Starane	
LEADOFF	bromoxynil rimsulfuron	Buctril, others Resolve	
LEADOIT	thifensulfuron mesotrione	Harmony Callisto	2
LEXAR EZ	s-metolachlor atrazine	Dual II Magnum AAtrex	
LUMAX EZ	mesotrione s-metolachlor	Callisto Dual II Magnum	1
	atrazine dicamba	AAtrex Clarity	
MARKSMAN	atrazine fluthiacet	AAtrex Cadet	
MARVEL	fomesafen primisulfuron	Flexstar Beacon	
NORTHSTAR	dicamba	Clarity	
OBEY	clomazone quinclorac	Command Facet	
OPTILL	saflufenacil imazethapyr	Sharpen Pursuit	
OPTILL PRO	saflufenacil imazethapyr	Sharpen Pursuit	
ODION	dimethenamid-P florasulam	Outlook 	
ORION	MCPA thifensulfuron	MCPA Harmony	
PANOFLEX	tribenuron thifensulfuron	Express Harmony	
PERMIT PLUS	halosulfuron	Permit	
PREFIX	s-metolachlor fomesafen	Dual Magnum Reflex	
PREQUEL	rimsulfuron isoxaflutole	Resolve Balance	
PRIORITY	carfentrazone halosulfuron	Aim Permit	
PROGRESS	desmedipham phenmedipham	Betenex	
	ethofumesate dicamba	Nortron Clarity	
PULSAR	fluroxypyr	Starane	
QUELEX*	halauxifen florasulam	Arylex	
RAVE	triasulfuron dicamba	Amber Clarity	
RAZE	flucarbazone fluroxypyr	Everest Starane	
REALM Q	rimsulfuron mesotrione	Resolve Callisto	
REBELEX	cyhalofop penoxsulam	Clincher Grasp	
REQUIRE Q	rimsulfuron dicamba	Resolve Clarity	
DECICODE*	clopyralid acetochlor	Stinger	
RESICORE*	mesotrione	Surpass NXT Callisto	
RESOLVE Q	rimsulfuron thifensulfuron	Resolve Harmony	
REVULIN Q	nicosulfuron mesotrione	Accent Q Callisto	
RIMFIRE MAX	propoxycarbazone mesosulfuron	Olympus Osprey	
ROUNDUP XTEND*	dicamba glyphosate	XtendiMax glyphosate	
ROWEL FX	flumioxazin chlorimuron	Valor Classic	
SEQUENCE	s-metolachlor glyphosate	Dual Magnum glyphosate	
SHOTGUN	atrazine 2,4-D	AAtrex 2,4-D	
SOLSTICE	mesotrione fluthiacet	Callisto Cadet	
SONIC	sulfentrazone cloransulam	Spartan FirstRate	
SPARTAN CHARGE	sulfentrazone	Spartan	
SPIRIT	carfentrazone prosulfuron	Aim Peak	
STANZA	primisulfuron clopyralid	Beacon Stinger	
	flumetsulam florasulam	Python 	
STARANE FLEX	fluroxypyr fluroxypyr	Starane Starane	
STARANE NXT	bromoxynil diflufenzopyr	Buctril	
STATUS	dicamba nicosulfuron	Clarity Accent Q	
STEADFAST Q	rimsulfuron	Resolve Basagran	
STORM	acifluorfen	Ultra Blazer	
SUPREMACY	fluroxypyr thifensulfuron	Starane Harmony	
SUPREND	tribenuron prometryn	Express Caparol	
201 HEIYD	trifloxysulfuron acetochlor	Envoke Surpass NXT	
SURESTART II	clopyralid	Stinger Python	
	flumetsulam	•	-
SURVEIL	flumetsulam flumioxazin cloransulam	Valor FirstRate	
SURVEIL	flumioxazin	FirstRate Classic	
SYNCHRONY	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor	FirstRate Classic Harmony Harness	
	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam	FirstRate Classic Harmony Harness Stinger Python	
SYNCHRONY	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam chlorimuron flumioxazin	FirstRate Classic Harmony Harness Stinger Python Classic Valor	
SYNCHRONY  TRIPLEFLEX II  TRIVENCE	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam chlorimuron	FirstRate Classic Harmony Harness Stinger Python Classic	
SYNCHRONY  TRIPLEFLEX II  TRIVENCE  VALOR XLT	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam chlorimuron flumioxazin metribuzin	FirstRate Classic Harmony Harness Stinger Python Classic Valor Metribuzin	
SYNCHRONY  TRIPLEFLEX II  TRIVENCE  VALOR XLT  VARISTO*	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam chlorimuron flumioxazin metribuzin flumioxazin chlorimuron	FirstRate Classic Harmony Harness Stinger Python Classic Valor Metribuzin Valor Classic	
SYNCHRONY  TRIPLEFLEX II  TRIVENCE  VALOR XLT	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam chlorimuron flumioxazin metribuzin flumioxazin chlorimuron imazamox bentazon hexazinone diuron	FirstRate Classic Harmony Harness Stinger Python Classic Valor Metribuzin Valor Classic Raptor Basagran Velpar Karmex	
SYNCHRONY  TRIPLEFLEX II  TRIVENCE  VALOR XLT  VARISTO*	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam chlorimuron flumioxazin metribuzin flumioxazin chlorimuron imazamox bentazon hexazinone diuron saflufenacil dimethenamid-P	FirstRate Classic Harmony Harness Stinger Python Classic Valor Metribuzin Valor Classic Raptor Basagran Velpar Karmex Sharpen Outlook	
SYNCHRONY  TRIPLEFLEX II  TRIVENCE  VALOR XLT  VARISTO*  VELPAR ALFAMAX	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam chlorimuron flumioxazin metribuzin flumioxazin chlorimuron imazamox bentazon hexazinone diuron saflufenacil dimethenamid-P fomesafen acetochlor	FirstRate Classic Harmony Harness Stinger Python Classic Valor Metribuzin Valor Classic Raptor Basagran Velpar Karmex Sharpen Outlook Reflex Warrant	
SYNCHRONY  TRIPLEFLEX II  TRIVENCE  VALOR XLT  VARISTO*  VELPAR ALFAMAX  VERDICT  WARRANT ULTRA  WELD	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam chlorimuron flumioxazin metribuzin flumioxazin chlorimuron imazamox bentazon hexazinone diuron saflufenacil dimethenamid-P fomesafen	FirstRate Classic Harmony Harness Stinger Python Classic Valor Metribuzin Valor Classic Raptor Basagran Velpar Karmex Sharpen Outlook Reflex	
SYNCHRONY  TRIPLEFLEX II  TRIVENCE  VALOR XLT  VARISTO*  VELPAR ALFAMAX  VERDICT  WARRANT ULTRA  WELD  (FULL DECK)	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam chlorimuron flumioxazin metribuzin flumioxazin chlorimuron imazamox bentazon hexazinone diuron saflufenacil dimethenamid-P fomesafen acetochlor MCPA	FirstRate Classic Harmony Harness Stinger Python Classic Valor Metribuzin Valor Classic Raptor Basagran Velpar Karmex Sharpen Outlook Reflex Warrant MCPA	
SYNCHRONY  TRIPLEFLEX II  TRIVENCE  VALOR XLT  VARISTO*  VELPAR ALFAMAX  VERDICT  WARRANT ULTRA  WELD	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam chlorimuron flumioxazin metribuzin flumioxazin chlorimuron imazamox bentazon hexazinone diuron saflufenacil dimethenamid-P fomesafen acetochlor MCPA fluroxypyr clopyralid	FirstRate Classic Harmony Harness Stinger Python Classic Valor Metribuzin Valor Classic Raptor Basagran Velpar Karmex Sharpen Outlook Reflex Warrant MCPA Starane Stinger	
SYNCHRONY  TRIPLEFLEX II  TRIVENCE  VALOR XLT  VARISTO*  VELPAR ALFAMAX  VERDICT  WARRANT ULTRA  WELD  (FULL DECK)	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam chlorimuron flumioxazin metribuzin flumioxazin chlorimuron imazamox bentazon hexazinone diuron saflufenacil dimethenamid-P fomesafen acetochlor MCPA fluroxypyr clopyralid clopyralid fluroxypyr fenoxaprop pyrasulfotole	FirstRate Classic Harmony Harness Stinger Python Classic Valor Metribuzin Valor Classic Raptor Basagran Velpar Karmex Sharpen Outlook Reflex Warrant MCPA Starane Stinger Stinger Starane Tecoma	
SYNCHRONY  TRIPLEFLEX II  TRIVENCE  VALOR XLT  VARISTO*  VELPAR ALFAMAX  VERDICT  WARRANT ULTRA  WELD  (FULL DECK)  WIDEMATCH	flumioxazin cloransulam chlorimuron thifensulfuron acetochlor clopyralid flumetsulam chlorimuron flumioxazin metribuzin flumioxazin chlorimuron imazamox bentazon hexazinone diuron saflufenacil dimethenamid-P fomesafen acetochlor MCPA fluroxypyr clopyralid clopyralid fluroxypyr fenoxaprop	FirstRate Classic Harmony Harness Stinger Python Classic Valor Metribuzin Valor Classic Raptor Basagran Velpar Karmex Sharpen Outlook Reflex Warrant MCPA Starane Stinger Stinger Starane	

\*Indicates product is not registered for use at the time of printing.

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