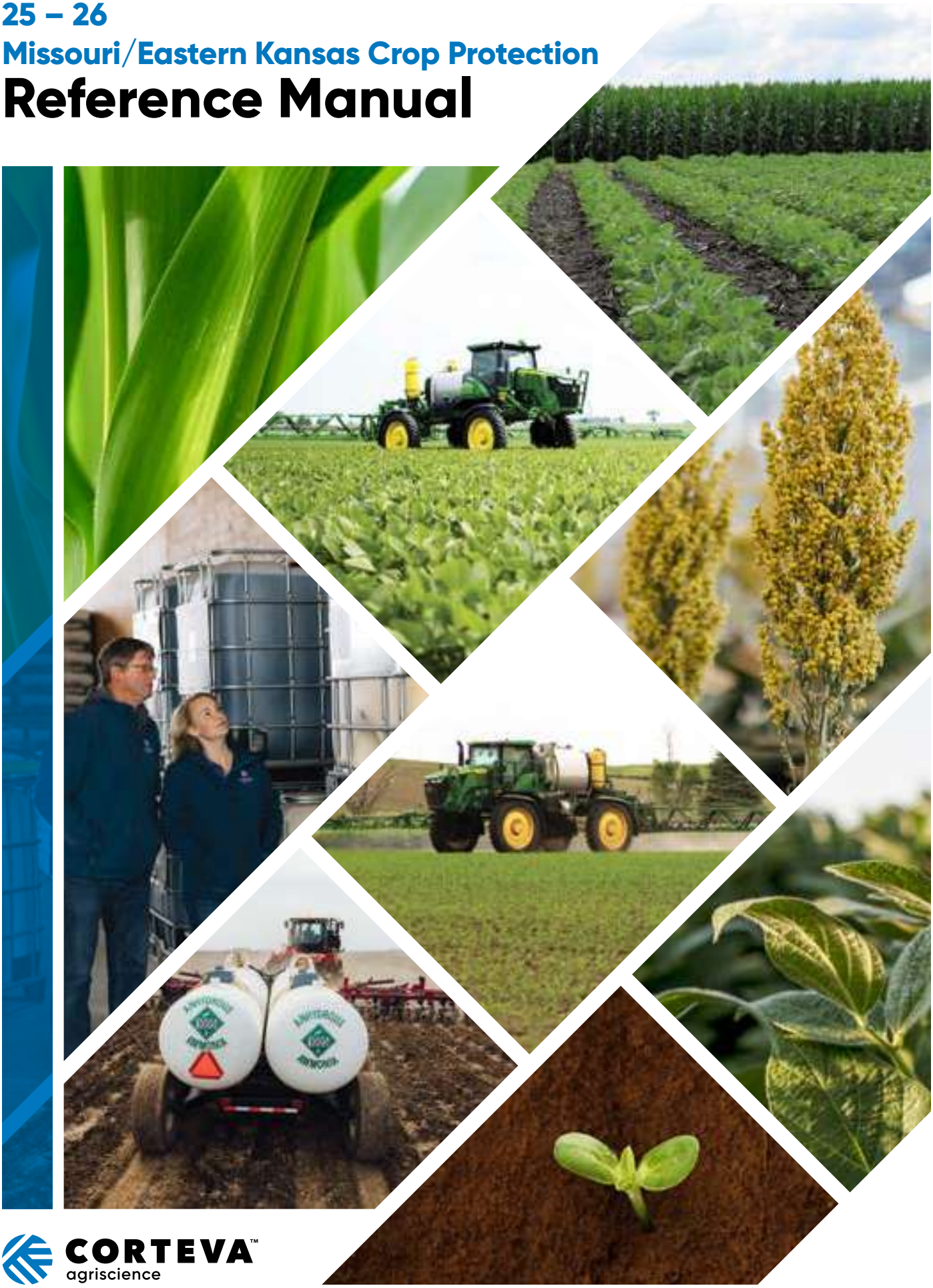
25 – 26

Missouri/Eastern Kansas Crop Protection

Reference Manual



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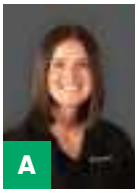

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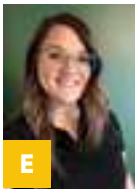

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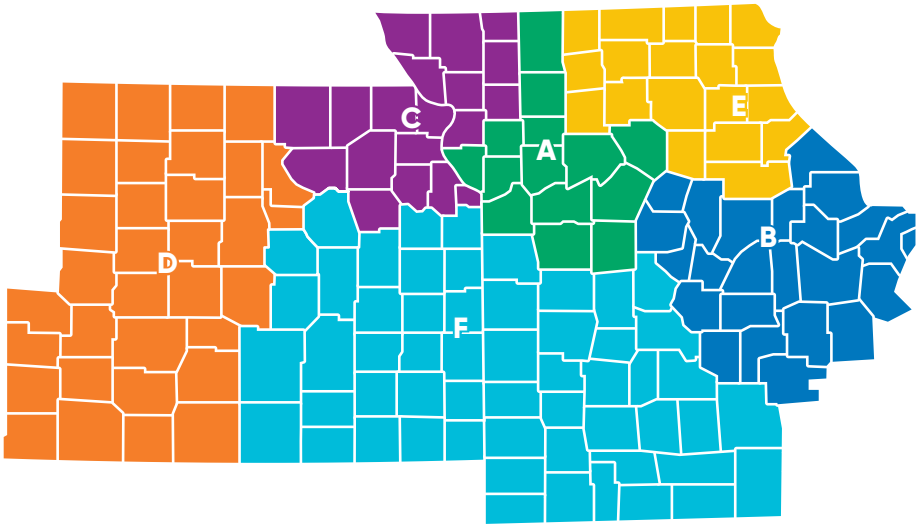

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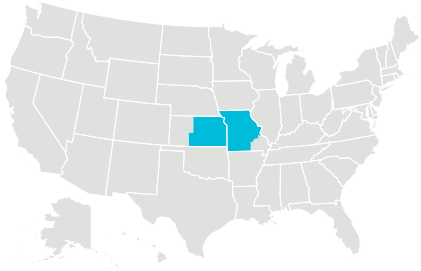

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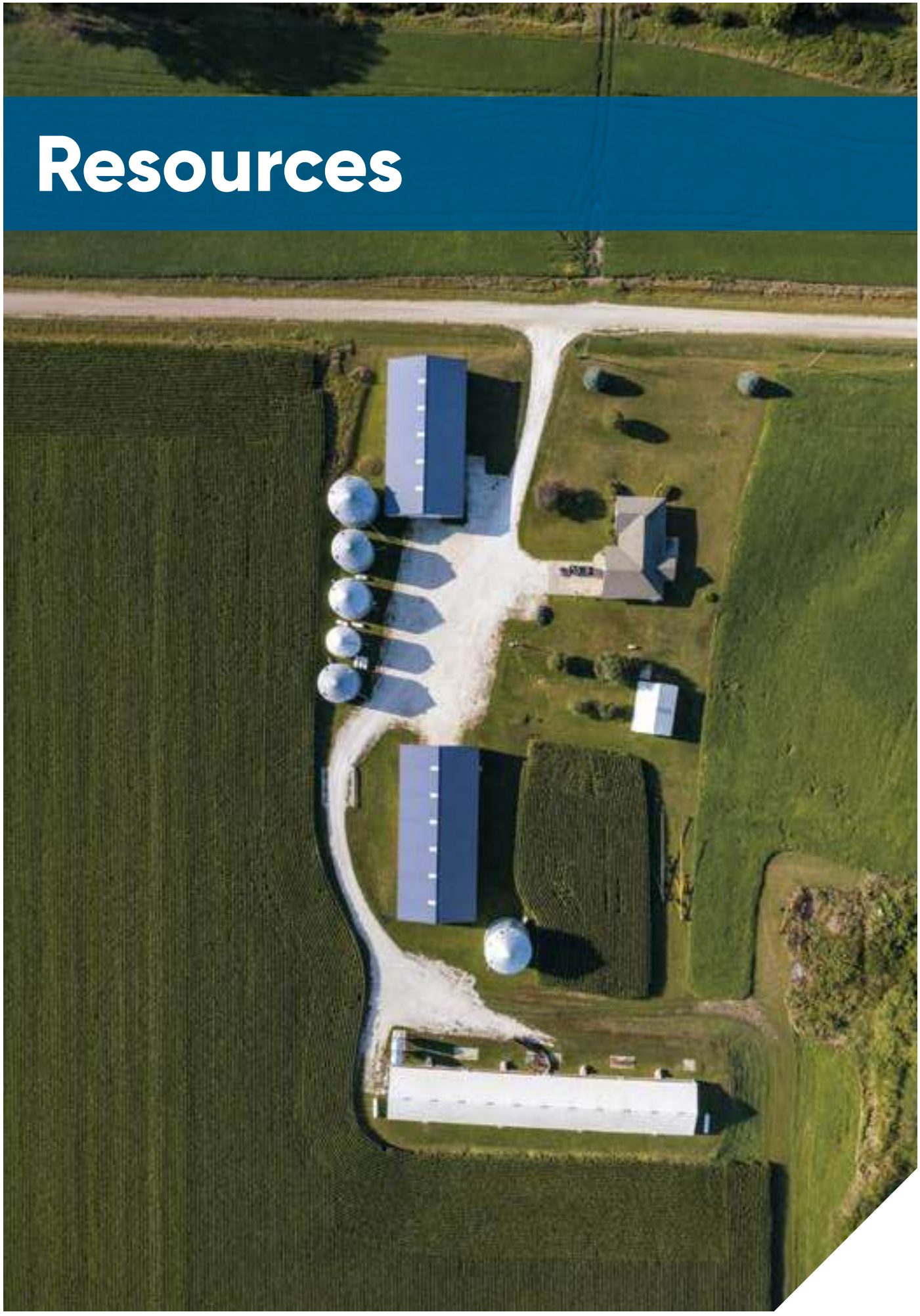

Product Information

Fungicides	Active Ingredients	Group – Mode of Action	Formulation
Aproach®	Onmira® active *(Picoxystrobin)*	**11** Respiration Inhibitors	SC
Aproach® **Prima**	Onmira active *(Picoxystrobin)* + Cyproconazole	**11** Respiration Inhibitors **3** Cell Membrane Disruptors	SC
Bexfond® biological fungicide	Bacillus amyloliquefaciens	**31** Baculoviruses	Live organism
Fontelis®	Penthiopyrad	**7** Succinate Dehydrogenase Inhibitor	SC
Forcivo™	Azoxystrobin + Fluindapyr + Flutriafol	**11** Respiration Inhibitors **7** Succinate Dehydrogenase Inhibitor **3** Cell Membrane Disruptor	SC
Viatude®	Onmira active *(Picoxystrobin)* + Prothioconazole	**11** Respiration Inhibitors **3** Cell Membrane Disruptors	SC

Herbicides	Active Ingredients	Group – Mode of Action	Formulation
Accent® Q	Nicosulfuron + Safener	**2** ALS Inhibitor	WDG
Afforia®	Flumioxazin + Thifensulfuron-Methyl + Tribenuron-Methyl	**14** PPO Inhibitor **2** ALS Inhibitor	WDG
Basis® Blend	Rimsulfuron + thifensulfuron	**2** ALS Inhibitor	SG
Enlist Duo®	Glyphosate 2,4-D choline	**9** EPSP Synthase Inhibitor **4** Growth Regulator	WSL
Enlist One®	2,4-D choline	**4** Growth Regulator	WSL
Elevore®	Arylex® active *(Halauxifen-methyl)*	**4** Growth Regulator	SC
Enlite®	Chlorimuron + Thifensulfuron + Flumioxazin	**2** ALS Inhibitor **14** PPO Inhibitor	DG
Enversa™	Acetochlor *(encapsulated)*	**15** Long-chain Fatty Acid Inhibitor	ME
Envive®	Chlorimuron + Thifensulfuron + Flumioxazin	**2** ALS Inhibitor **14** PPO Inhibitor	DG
EverpreX®	S-metolachlor	**15** Long-chain Fatty Acid Inhibitor	EC
FulTime® NXT	Acetochlor *(encapsulated)* + Atrazine	**15** Long-chain Fatty Acid Inhibitor **5** Photosynthesis Inhibitor	CS
GoldSky®	Florasulam + Fluroxypyr + Pyroxsulam	**2** ALS Inhibitor **4** Growth Regulator	OD
Hulk™	Florpyrauxifen-benzyl	**4** Growth Regulator	ZC
Keystone® NXT	Acetochlor + Atrazine	**15** Long-chain Fatty Acid Inhibitor **5** Photosynthesis Inhibitor	SE
Keystone® LA NXT	Acetochlor + Atrazine	**15** Long-chain Fatty Acid Inhibitor **5** Photosynthesis Inhibitor	SE
Kyber® Pro	Pyroxasulfone + Flumioxazin + Metribuzin	**15** Long-chain Fatty Acid Inhibitor **14** PPO Inhibitor **5** Photosynthesis Inhibitor	SC
Kyro®	Acetochlor *(encapsulated)* + Topramezone + Clopyralid	**15** Long-chain Fatty Acid Inhibitor **27** HPPD Inhibitor **4** Growth Regulator	ZC
LeadOff®	Rimsulfuron + Thifensulfuron	**2** ALS Inhibitor	SG
OpenSky®	Fluroxypyr + Pyroxsulam	**4** Growth Regulator **2** ALS Inhibitor	SE
PerfectMatch®	Clopyralid + Fluroxypyr + Pyroxsulam	**4** Growth Regulator **2** ALS Inhibitor	SE
Pixxaro® EC	Fluroxypyr + Arylex active *(Halauxifen-methyl)*	**4** Growth Regulator	EC
PowerFlex® HL	Pyroxsulam	**2** ALS Inhibitor	WDG
Quelex®	Arylex active *(Halauxifen-methyl)* + Florasulam	**4** Growth Regulator **2** ALS Inhibitor	WDG
Realm® Q	Rimsulfuron + Safener + Mesotrione	**2** ALS Inhibitor **27** HPPD Inhibitor	WDG
Resicore® REV	Acetochlor *(encapsulated)* + Mesotrione + Clopyralid	**15** Long-chain Fatty Acid Inhibitor **27** HPPD Inhibitor **4** Growth Regulator	ZC
Resolve® Q	Rimsulfuron + Thifensulfuron + Safener	**2** ALS Inhibitor	SG
Revulin® Q	Nicosulfuron + Safener + Mesotrione	**2** ALS Inhibitor **27** HPPD Inhibitor	DF
Rezuvant®	Pinoxaden + Arylex® active *(Halauxifen-methyl)* + Fluroxypyr	**1** Lipid Synthesis Inhibitor **4** Growth Regulator	EC
Sonic®	Cloransulam-Methyl + Sulfentrazone	**2** ALS Inhibitor **14** PPO Inhibitor	WDG

Herbicides	Active Ingredients	Group – Mode of Action	Formulation
Sonic® Boom	Sulfentrazone + Metribuzin	**14** PPO Inhibitor **5** Photosynthesis Inhibitor	SC
Starane® Flex	Florasulam + Fluroxypyr	**2** ALS Inhibitor **4** Growth Regulator	SE
Starane® NXT	Fluroxypyr + Bromoxynil	**4** Growth Regulator **6** Photosystem II Inhibitor	EC
Starane® Ultra	Fluroxypyr	**4** Growth Regulator	EC
Staredown®	Fluroxypyr	**4** Growth Regulator	EC
Steadfast® Q	Nicosulfuron + Rimsulfuron + Safener	**2** ALS Inhibitor	WDG
Stinger® HL	Clopyralid	**4** Growth Regulator	SL
SureStart® II	Clopyralid + Acetochlor + Flumetsulam	**4** Growth Regulator **15** Long-chain Fatty Acid Inhibitor **2** ALS Inhibitor	SE
Surpass® NXT	Acetochlor	**15** Long-chain Fatty Acid Inhibitor	EC
Surveil®	Cloransulam-Methyl + Flumioxazin	**2** ALS Inhibitor **14** PPO Inhibitor	WDG
Tarzec®	Pyroxsulam + Arylex active *(Halauxifen-methyl)*	**2** ALS Inhibitor **4** Growth Regulator	WDG
TeamMate®	Pyroxsulam	**2** ALS Inhibitor	WDG
Tolvera™	Tolpyralate + Bromoxynil	**27** HPPD inhibitors **6** Photosystem II Inhibitor	EC
Trivence®	Chlorimuron + Flumioxazin + Metribuzin	**2** ALS Inhibitor **14** PPO Inhibitor **5** Photosynthesis Inhibitor	WDG
WideMatch®	Clopyralid + Fluroxypyr	**4** Growth Regulator	EW
WideARMatch®	Arylex active + Clopyralid + Fluroxypyr	**4** Growth Regulator	ME
Zest® WDG	Nicosulfuron	**2** ALS Inhibitor	WDG
Insecticides	**Active Ingredients**	**Group – Mode of Action**	**Formulation**
Hemi™ SC	Spinetoram	**5** *(nAChR)* allosteric modulators	SC
Intrepid 2F®	Methoxyfenozide	**18** Octopamine receptor agonists *(nerve action)*	SC
Intrepid Edge®	Methoxyfenozide + Spinetoram	**18** Octopamine receptor agonists *(nerve action)* **5** *(nAChR)* allosteric modulators	SC
Radiant® SC	Jemvelva™ active *(Spinetoram)*	**5** *(nAChR)* allosteric modulators	SC
Ridgeback®	Isoclast® active *(sulfoxaflor)* + Bifenthrin	**4C** Sulfoximines *(nAChR competitive modulator)* **3A** Pyrethroids *(Sodium Channel Modulators)*	SE
Transform® WG	Isoclast active *(sulfoxaflor)*	**4C** Sulfoximines *(nAChR competitive modulator)*	WDG
Insecticide/nematicide	**Active Ingredients**	**Group – Mode of Action**	**Formulation**
Vydate® C-LV	Oxamyl	**1A** Carbamate *(AChE inhibitor)*	WSL
Vydate® L	Oxamyl	**1A** Carbamate *(AChE inhibitor)*	SL
Nematicide	**Active Ingredients**	**Group – Mode of Action**	**Formulation**
Salibro®	Reklemel® active *(Fluazaindolizine)*	**N-UN** Unknown	SE
Nitrogen Stabilizers	**Active Ingredients**	**Mode of Action**	**Formulation**
Instinct NXTGEN®	Optinyte® technology *(encapsulated)*	Nitrification inhibitor	ME
N-Serve®	Optinyte technology *(nitrapyrin)*	Nitrification inhibitor	EC
Seed Treatment	**Active Ingredients**	**Group – Mode of Action**	**Formulation**
Lumivia® CPL Insecticide Seed Treatment	Chlorantraniliprole	**28** Ryanodine receptor modulators *(Nerve & muscle action)*	FS

Formulation Types:

AS: Aqueous Solution
CS: Capsule Suspension
DF: Dry Flowable
DG: Dispersible Granules
EC: Emulsifiable Concentrate
EW: Emulsion In Water
FS: Flowable Seed Concentrate
ME: Micro-Encapsulated
OD: Oil Dispersion
SC: Soluble Concentrate
SE: Suspension Emulsion
SG: Soluble Granules
SL: Soluble Liquid
WDG: Water Dispersible Granule
WP: Wettable Powder
WSL: Water Soluble Liquid
ZC: CS + SC Mixed Formulation

FulTime NXT, Keystone NXT, Keystone LA NXT, Vydate C-LV and Vydate L are Restricted Use Pesticides.

This reference guide is not intended as a substitute for the product label for the product(s) referenced herein. Product labels for the above product(s) contain important precautions, directions for use, and product warranty and liability limitations, which must be read before using the product(s). Applicators must be in possession of the product label(s) at the time of application. Always read and follow all label direction and precautions for use when using any pesticide alone or in tank-mix combinations.

Arylex, Isoclast, Jemvelva, Onmira, Optinyte and Reklemel are registered active ingredients. Not all products are registered for sale or use in all states and counties. Enversa, FulTime NXT, Keystone LA NXT, Keystone NXT, Kyro, Resicore REV, Stinger, SureStart II, Surpass NXT are not available for sale, distribution or use in Nassau and Suffolk counties in the state of New York. Do not fall-apply anhydrous ammonia south of Highway 16 in the state of Illinois. Enlist One and Enlist Duo are the only 2,4-D products authorized for use in Enlist crops. Contact your state pesticide regulatory agency to determine if a product is registered for sale or use in your area. Consult the label before purchase or use for full details. Always read and follow label directions.

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Technical Requirements

Product	Restricted Use Pesticide	Restricted Entry Interval (hrs.)	Signal Word	Rainfast	Pre-Harvest Interval (Days)	Storage Temp Requirements
Fungicides						
Aproach®	No	12	Caution	1 hr	*	Store > 32°F, mix well
Aproach® Prima	No	12	Caution	1 hr	*	Store > 32°F, mix well
Bexfond® biological fungicide	No	24	Caution	N/A	*	Store > 39°F
Fontelis®	No	12	Caution	1 hr	*	Do Not Freeze
Forcivo™	No	12	Caution	N/A	*	Store > 32°F, mix well
Viatude®	No	24	Caution	N/A	36*	Store > 32°F, mix well
Herbicides						
Accent® Q	No	4	Caution	4 hrs	*	No Specific Precautions
Afforia®	No	12	Caution	1 hr	N/A	No Specific Precautions
Basis® Blend	No	4	Caution	N/A	N/A	No Specific Precautions
Enlist Duo®	No	48	Warning	4 hrs	*	Store > -40°; Warm > 40°F, mix well
Enlist One®	No	48	Warning	4 hrs	*	Store > -40°; Warm > 40°F, mix well
Elevore®	No	12	Caution	1 hr	N/A	Store > -40°; Warm > 40°F, mix well
Enlite®	No	12	Caution	1 hr	N/A	No Specific Precautions
Envive®	No	12	Caution	1 hr	N/A	No Specific Precautions
EverpreX®	No	24	Caution	N/A	90*	Store > -40°; Warm > 40°F, mix well
Enversa™	No	12	Caution	N/A	*	No Specific Precautions
FulTime® NXT	Yes	12	Caution	N/A	60*	Warm > 50°F, mix well
Goldsky®	No	24	Warning	4 hrs	60	Warm > 50°F, mix well
Keystone® NXT	Yes	12	Caution	N/A	60*	Warm > 50°F, mix well
Keystone® LA NXT	Yes	12	Caution	N/A	60*	Warm > 50°F, mix well
Kyber® Pro	No	12	Caution	1 hr	40*	Store > -40°; Warm > 40°F, mix well
Kyro®	No	48	Caution	N/A	*	Store > -40°; Warm > 40°F, mix well
LeadOff®	No	4	Caution	N/A	N/A	No Specific Precautions
OpenSky®	No	24	Caution	4 hrs	60	Store > -40°; Warm > 40°F, mix well
PerfectMatch®	No	24	Warning	4 hrs	60	Store > -40°; Warm > 40°F, mix well
Pixxaro® EC	No	12	Caution	1 hr	60	Store > -40°; Warm > 40°F, mix well
PowerFlex® HL	No	12	Caution	4 hrs	60	No Specific Precautions
Quelex®	No	12	Caution	4 hrs	60	No Specific Precautions
Realm® Q	No	12	Caution	4 hrs	*	No Specific Precautions
Resicore® REV	No	24	Caution	N/A	*	Store > -40°; Warm > 40°F, mix well
Resolve® Q	No	4	Caution	4 hrs	*	No Specific Precautions
Revulin® Q	No	12	Caution	4 hrs	*	No Specific Precautions
Rezuvant®	No	48	Caution	1 hr	60	Store > -40°; Warm > 40°F, mix well
Sonic®	No	12	Caution	N/A	65	No Specific Precautions

Product	Restricted Use Pesticide	Restricted Entry Interval (hrs.)	Signal Word	Rainfast	Pre-Harvest Interval (Days)	Storage Temp Requirements
Herbicides						
Sonic® Boom	No	12	Caution	N/A	14*	Store > -40°; Warm > 40°F, mix well
Starane® Flex	No	24	Warning	4 hrs	60	Store > -40°; Warm > 40°F, mix well
Starane® NXT	No	24	Warning	1 hr	45	Store > -40°; Warm > 40°F, mix well
Starane® Ultra	No	24	Warning	1 hr	*	Store > -40°; Warm > 40°F, mix well
Steadfast® Q	No	4	Caution	4 hrs	N/A	No Specific Precautions
Stinger® HL	No	12	Caution	6 hrs	*	Store > 28°; Warm > 40°F
SureStart® II	No	48	Warning	N/A	85	Warm > 50°F, mix well
Surpass® NXT	No	12	Warning	N/A	N/A	Store > -40°; Warm > 40°F, mix well
Surveil®	No	12	Caution	2 hrs	N/A	No Specific Precautions
Tarzec®	No	12	Caution	N/A	60	Store > 40°F
TeamMate®	No	12	Warning	4 hrs	60	No Specific Precautions
Tolvera™	No	24	Warning	N/A	50	DO NOT Store over 120°F
Trivence®	No	12	Caution	1 hr	N/A	No Specific Precautions
WideMatch®	No	12	Caution	6 hrs	40*	Warm > 50°F, mix well
WideARmatch®	No	24	Warning	1 hr	60	Warm > 50°F, mix well
Insecticides						
Intrepid Edge®	No	4	Caution	When dry	*	Specific to crop
Ridgeback®	No	24	Warning	1-2 hr	*	Store > 39°F
Transform® WG	No	24	Danger	N/A	*	No Specific Precautions
Nitrogen Stabilizer						
Instinct NXTGEN®	No	24	Caution	N/A	Do not apply past V6	Store > -40°; Warm > 40°F, mix well
N-Serve®	No	24	Warning	N/A	N/A	Store > -40°; Warm > 40°F, mix well
Seed Treatment						
Lumivia® CPL	No	24	Caution	N/A	–	Store > 32°F

* Please refer to federal label for specific crop PHI

N/A = Not available, default to 4 hours

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Package Sizes

Fungicides	Package	Case	Pallet
Aproach®	2x2.5 gal jug	5 gal	180 gal
Aproach® **Prima**	2x2.5 gal jug 250 gal mini bulk	5 gal	180 gal
Bexfond® biological fungicide	2x2.5 gal jug	5 gal	150 gal
Fontelis®	4x80 oz btl 2x2.5 gal jug	5 gal	90 gal 180 gal
Forcivo™	2x2.5 gal jug 250 gal mini bulk	5 gal	180 gal
Viatude®	2x2.5 gal jug 250 gal mini bulk	5 gal	180 gal

Herbicides	Package	Case	Pallet
Accent® Q	12x18 oz bottle	216 oz	7,776 oz
Afforia®	8x75 oz bottle	600 oz	10,800 oz
Basis® Blend	8x50 oz bottle	400 oz	7,200 oz
Enlist Duo®	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal
Enlist One®	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal
Elevore®	4x1 qt btl	1 gal	100 gal
Enlite®	8x84 oz bottle	672 oz	12,096 oz
Enversa™	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal
Envive®	8x88 oz bottle	704 oz	12,672 oz
EverpreX®	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal
FulTime® NXT	Bulk	-	-
GoldSky®	2x2.5 gal jug 120 gal	5 gal	180 gal
Hulk™	2X2.5 gal	5 gal	180 gal
Keystone® NXT	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal
Keystone® LA NXT	2x2.5 gal jug Bulk	5 gal	180 gal
Kyber® Pro	2x2.5 gal jug 265 gal	5 gal	180 gal
Kyro®	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal
LeadOff®	8x60 oz bottle	480 oz	8,640 oz
OpenSky®	2x2.5 gal jug 120 gal	5 gal	180 gal
PerfectMatch®	2x2.5 gal jug 120 gal	5 gal	180 gal
Pixxaro® EC	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal
PowerFlex® HL	4x10 lb btl	40 lbs	720 lbs
Quelex®	6x1.875 lb btl	11.25 lbs	562.5 lbs
Realm® Q	8x80 oz bottle	640 oz	7,200 oz
Resicore® REV	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal
Resolve® Q	8x50 oz bottle	400 oz	7,200 oz
Revulin® Q	8x85 oz bottle	680 oz	12,240 oz

Herbicides	Package	Case	Pallet
Rezuvant®	120 mini 2x2.5 gal	5 gal	180 gal
Sonic®	2x7.5 lb jug	15 lbs	720 lbs
Sonic® Boom	2x2.5 gal jug 250 gal mini bulk	5 gal	180 gal
Staple® LX	4x0.5 gal bottle	2 gal	90 gal
Starane® Flex	2x2.5 gal jug 30 gal drum 250 gal mini Bulk	5 gal	180 gal 150 gal
Starane® NXT	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal
Starane® Ultra	2x2.5 gal jug	5 gal	180 gal
Staredown®	2x2.5 gal jug 250 gal	5 gal	180 gal
Steadfast® Q	8x60 oz bottle	480 oz	8640 oz
Stinger® HL	2x2.5 gal jug	5 gal	180 gal
SureStart® II	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal
Surpass® NXT	2x2.5 gal jug Bulk	5 gal	180 gal
Surveil®	2x7.5 lb jug	15 lbs	720 lbs
Tarzec®	4x5 lb btl	20 lbs	960 lbs
TeamMate®	4x10 lb btl	40 lbs	720 lbs
Tolvera™	2x2.5 gal jug 120 gal	5 gal	180 gal
Trivence®	2x200 oz bottle	400 oz	9,600 oz
WideMatch®	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal
WideARmatch®	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal

Insecticides	Package	Case	Pallet
Hemi™ SC	4x1 gal jug	4 gal	192 gal
Intrepid 2F®	4x1 gal jug	4 gal	192 gal
Intrepid Edge®	4x1 gal jug	4 gal	192 gal
Radiant® SC	12x1 qt btl	3 gal	150 gal
Ridgeback®	2x2.5 gal jug 120 gal	5 gal	180 gal
Transform® WG	2x8 lb jug 4x3 lb jug	12 lbs	384 lbs 576 lbs
Vydate® C-LV Insecticide/nematicide	2x2.5 gal jug 250 gal Bulk	5 gal	120 gal
Vydate® L Insecticide/nematicide	2x2.5 gal jug drum	5 gal	120 gal

Nematicides	Package	Case	Pallet
Salibro®	2x2.5 gal jug 110 gal mini bulk	5 gal	180 gal

Nitrogen Stabilizers	Package	Case	Pallet
Instinct NXTGEN®	2x2.5 gal jug 250 gal & Bulk	5 gal	180 gal
N-Serve®	Bulk	–	–

FulTime NXT, Keystone NXT, Keystone LA NXT, Vydate C-LV and Vydate L are Restricted Use Pesticides.

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Bulk Density Guide *(subject to change)*

Fungicides			Density (lb/gal) at 68° F
EPA Reg. #	Product	a.i. (lb/gal)	
352-840	**Aproach**®	2.08 lb. picoxystrobin	9.270
352-883	**Aproach**® **Prima**	1.67 lb. picoxystrobin + 0.67 lb. cyproconazole	9.300
352-834	**Fontelis**®	1.67 lb. penthiopyrad	8.17
352-942	**Viatude**®	Prothioconazole + Picoxystrobin	9.18
Herbicides			**Density** (lb/gal) at 68° F
EPA Reg. #	Product	a.i. (lb/gal)	
62719-739	**DuraCor**®	0.667 lb aminopyralid + 0.067 lb florpyrauxifen-benzyl	8.821
62719-649	**Enlist Duo**®	1.6 lbs 2,4-D + 1.7 lbs glyphosate	9.772
62719-695	**Enlist One**®	3.8 lb. 2,4-D	9.956
62719-775	**Enversa**™	3 lbs. acetochlor	9.096
352-923	**EverpreX**®	7.62 lb. S-metolachlor	9.138
62719-668	**FulTime**® NXT	2.7 lbs acetochlor + 1.34 lbs atrazine	9.246
62719-182	**Grazon**® P+D	0.54 lbs picloram + 2.0 lb 2,4-D acetic acid	9.588
62719-628	**GrazonNext**® HL	0.41 lbs aminopyralid + 3.33 lbs 2,4-D acetic acid	9.741
62719-655	**GrazonPD3**™	0.81 lbs 4-amino-3,5,6-trichloro-2-pyridinecarboxylic acid + 3 lbs *(2,4-dichlorophenoxy)* acetic acid	10.05
62719-670	**Keystone**® LA NXT	4.3 lbs acetochlor + 1.7 lbs atrazine	9.238
62719-671	**Keystone**® NXT	3.1 lbs acetochlor + 2.5 lbs atrazine	9.271
59639-236	**Kyber**® Pro	0.5 lb flumioxazin + 1.5 lb metribuzin + 0.64 lb pyroxasulfone	9.43
62719-766	**Kyro**®	2.78 lb acetochlor + 0.046 lb topramezone + 0.247 lb clopyralid	9.26
62719-721	**OpenSky**®	0.95 lb fluroxypyr acid + 0.107 lb pyroxsulam	8.370
62719-685	**PerfectMatch**®	0.75 lb clopyralid + 0.75 lb fluroxypyr + 0.11 lb pyroxsulam	8.736
62719-735	**Pixxaro**® EC	0.1 lb halauxifen + 2.33 lb fluroxypyr	8.646
62719-756	**Resicore**® REV	2.8 lbs acetochlor + 0.27 lbs mesotrione + 0.19 lbs clopyralid	9.12
62719-750	**Rezuvant**®	0.035 lb halauxifen + 0.869 lb fluroxypyr + 0.42 lb pinoxaden	8.184
70506-394-62719	**Sonic**® Boom	2.23 lbs metribuzin + 1.12 lbs sulfentrazone	9.546
62719-604	**Starane**® Flex	0.833 lbs fluroxypry + 0.042 lbs florasulam	8.319
62719-747	**Stinger**® HL	5 lb clopyralid	10.25
62719-679	**SureStart**® II	0.38 lbs clopyralid + 3.75 lbs acetochlor + 0.12 lb flumetsulam	9.096
62719-672	**Surpass**® NXT	7 lbs acetochlor	9.179
62719-761	**Tolvera**™	0.156 lb Tolpyralate + 1.557 lb bromoxynil	8.869
62719-512	**WideMatch**®	0.75 lb clopyralid + 0.75 lb fluroxypyr	8.745
62719-746	**WideARmatch**®	0.82 lb clopyralid + 1.02 lb fluroxypyr + 0.04 lb halauxifen	8.853
Insecticides			**Density** (lb/gal) at 68° F
EPA Reg. #	Product	a.i. (lb/gal)	
62719-666	**Intrepid Edge**®	2.5 lb. methoxyfenozide + 0.5 lb. spinetoram	8.957
62719-749	**Ridgeback**®	0.31 sulfoxaflor + 0.93 bifenthrin	8.38
Nitrogen stabilizers			**Density** (lb/gal) at 68° F
EPA Reg. #	Product	a.i. (lb/gal)	
62719-741	**Instinct** NXTGEN®	2.50 lbs nitrapyrin	9.930
62719-20	**N-Serve**®	2 lbs nitrapyrin	8.120

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Bulk Handling

Quick Reference Guide

Product	Seals				Pumps	
	Silicone	Teflon	Viton	EPDM	Stainless	Cast Iron
Herbicides						
Enlist One®	OK	OK	OK	No	OK	No
Enlist Duo®	OK	OK	OK	OK	OK	No
Enversa™	OK	OK	Caution	Caution	OK	No
FulTime® NXT	–	OK	OK	–	OK	OK[1]
Keystone® NXT	–	OK	No	Caution	OK	OK
Keystone® LA NXT	OK	OK	No	Caution	OK	OK
Kyro®	OK	OK	–	–	–	–
Resicore®	OK	OK	Caution	No	OK	No
Resicore® REV	OK	OK	No	No	OK[1]	No
SureStart® II	OK	OK	No	Caution	OK	–
Surpass® NXT	–	OK	OK	OK	OK	OK
Rezuvant®	No	OK	OK	No	OK	OK
WideARmatch®	Caution	–	No	No	OK	Caution

Range and Pasture Herbicides							
DuraCor™	8.821	OK	OK	OK	OK	OK	Caution[1]
Grazon® P+D	9.588	OK	OK	OK	OK	OK	OK
GrazonNext® HL	9.741	OK	OK	OK	OK	OK	OK
Nitrogen Stabilizers							
Instinct NXTGEN®	9.93	OK	OK	OK	No	OK[1]	OK[1]
N-Serve®	8.12	No	OK	Caution	No	Yes	No

See MSDS for complete information

1 Requires Scot Pressurseal pump on bulk tank.

2 PVRV = Pressure Vacuum Relief Vent (aka Conservation Vent), also known as PRV (Pressure Relief Vent or Pressure/Vacuum Relief Vent)

3 ERV = Emergency Relief Vent (required on lower flash point products)

4 Air Dryer required with annual maintenance (replace the desiccant annually)

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Product	Hoses		Bulk Tank Venting	Recirculation
	EPDM	XLPE (lined)		
Herbicides				
Enlist One®	No	Yes	PVRV[2]	Upon delivery & upon use
Enlist Duo®	Yes	Yes	PVRV[2]	After freezing
Enversa™	No	Yes	PVRV[2]	Upon delivery & upon use
FulTime® NXT	–	Yes	PVRV[2]	Upon delivery & upon use
Keystone® NXT	No	Yes	PVRV[2]	2x prior to use
Keystone® LA NXT	No	Yes	PVRV[2]	2x prior to use
Kyro®	–	–	PVRV[2]	3x prior to use
Resicore®	No	Yes	PVRV[2]	Upon delivery & upon use
Resicore® REV	No	Yes	PVRV[2]	Upon delivery & upon use
SureStart® II	Yes	Yes	PVRV[2]	Upon delivery & upon use
Surpass® NXT	Yes	Yes	PVRV[2]	Not required
Rezuvant®	No	Yes	PVRV[2] and ERV[3]	Upon delivery & upon use
WideARmatch®	No	Yes	PVRV[2] and ERV[3]	Upon use
Range and Pasture Herbicides				
DuraCor™	Yes	Yes	PVRV[2]	3x before use
Grazon® P+D	Yes	Yes	PVRV[2]	Not required
GrazonNext® HL	Yes	Yes	PVRV[2]	Not required
Nitrogen Stabilizers				
Instinct NXTGEN®	No	Yes	PVRV[2]	3 Turns upon use
N-Serve®	No	Yes	PVRV[2], ERV[3] and Air Dryer[4]	Monthly > 40° and prior to use

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Under normal field conditions DuraCor® is non-volatile. DuraCor and GrazonNext HL have no grazing or haying restrictions for any class of livestock, including lactating dairy cows, horses (including lactating mares) and meat animals prior to slaughter. Label precautions apply to forage treated with DuraCor or GrazonNext HL to manure and urine from animals that have consumed treated forage.

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CORTEVA™ agriscience

Corn herbicide

Rate Conversions

			FulTime® NXT		Keystone® LA NXT		Keystone® NXT	
Pts.	Qts.	Oz.	Acetochlor (pt of 7 lb/gal)	Atrazine (qt of 4 lb/gal)	Acetochlor (pt of 7 lb/gal)	Atrazine (qt of 4 lb/gal)	Acetochlor (pt of 7 lb/gal)	Atrazine (qt of 4 lb/gal)
0.06	0.031	1.0	0.02	0.01	0.04	0.01	0.03	0.02
0.10	0.05	1.6	0.04	0.02	0.06	0.02	0.04	0.03
0.25	0.125	4.0	0.1	0.04	0.15	0.05	0.11	0.08
0.5	0.25	8.0	0.19	0.08	0.31	0.11	0.22	0.16
1.0	0.5	16.0	0.39	0.17	0.61	0.21	0.44	0.31
1.20	0.6	19.2	0.46	0.2	0.74	0.26	0.53	0.38
1.25	0.625	20.0	0.48	0.21	0.77	0.27	0.55	0.39
1.4	0.7	22.4	0.54	0.23	0.86	0.3	0.62	0.44
1.5	0.75	24.0	0.58	0.25	0.92	0.32	0.66	0.47
1.6	0.8	25.6	0.62	0.27	0.98	0.34	0.71	0.5
1.75	0.875	28.0	0.68	0.29	1.08	0.37	0.78	0.55
1.8	0.9	28.8	0.69	0.3	1.11	0.38	0.8	0.56
2.0	1.0	32.0	0.77	0.34	1.23	0.43	0.89	0.63
2.2	1.1	35.2	0.85	0.37	1.35	0.47	0.97	0.69
2.25	1.125	36.0	0.87	0.38	1.38	0.48	1.0	0.7
2.4	1.2	38.4	0.93	0.4	1.47	0.51	1.06	0.75
2.5	1.25	40.0	0.96	0.42	1.54	0.53	1.11	0.78
2.6	1.3	41.6	1.0	0.44	1.6	0.55	1.15	0.81
2.75	1.375	44.0	1.06	0.46	1.69	0.58	1.22	0.86
2.8	1.4	44.8	1.08	0.47	1.72	0.6	1.24	0.88
3.0	1.5	48.0	1.16	0.5	1.84	0.64	1.33	0.94
3.25	1.625	52.0	1.25	0.54	2.0	0.69	1.44	1.02
3.4	1.7	54.4	1.31	0.57	2.09	0.72	1.51	1.06
3.5	1.75	56.0	1.35	0.59	2.15	0.74	1.55	1.09
4.0	2.0	64.0	1.54	0.67	2.46	0.85	1.77	1.25
4.5	2.25	72.0	1.74	0.75	2.76	0.96	1.99	1.41
5.0	2.5	80.0	1.93	0.84	3.07	1.06	2.21	1.56
5.5	2.75	88.0	2.12	0.92	3.38	1.17	2.44	1.72
6.0	3.0	96.0	2.31	1.01	3.69	1.28	2.66	1.88
6.5	3.25	104.0	2.51	1.09	3.99	1.38	2.88	2.03
7.0	3.5	112.0	2.7	1.17	4.3	1.49	3.1	2.19
7.5	3.75	120.0	2.89	1.26	4.61	1.59	3.32	2.34
8.0	4.0	128.0	3.09	1.34	4.91	1.7	3.54	2.5
lbs of a.i./gal			2.7	1.34	4.3	1.7	3.1	2.5

Not labeled at these rates

Maximum Atrazine	lb a.i./A
Soil Applications	
- Not highly erodible soils	2
- Highly erodible soils leaving ≥ 30% residue	2
- Highly erodible soils leaving < 30% residue	1.6
Post-Emergence Applications	
If no previous atrazine applied prior to corn emergence	2
Total atrazine limit if a previous atrazine application was made prior to corn emergence	2.5

Formulation Conversions

Conversion of lbs a.i. to commercial dry formulation

Rate (lbs) commercial product per acre =
lbs of a.i. per A / % a.i. in product X 100

Conversion of lbs a.i. to commercial liquid formulation

Rate (gal) of commercial product per acre =
lbs a.i. per acre / lbs a.i. in gal

			Surpass® NXT	SureStart® II			Resicore® REV		
Pts.	Qts.	Oz.	Acetochlor (lbs a.i.)	Acetochlor (pt of 7 lb/gal)	Flumetsulam (oz of 80% a.i.)	Clopyralid (pt of 3 lb/gal)	Acetochlor (pt of 7 lb/gal)	Mesotrione (oz of 4 lb/gal)	Clopyralid (oz of 3 lb/gal)
0.06	0.031	1.0	0.05	0.03	0.02	0.1	0.03	0.07	0.06
0.10	0.05	1.6	0.09	0.05	0.03	0.16	0.04	0.11	0.1
0.25	0.125	4.0	0.22	0.13	0.08	0.39	0.1	0.27	0.25
0.5	0.25	8.0	0.44	0.27	0.15	0.78	0.2	0.53	0.51
1.0	0.5	16.0	0.88	0.54	0.3	1.55	0.4	1.07	1.01
1.20	0.6	19.2	1.05	0.64	0.36	1.86	0.48	1.28	1.22
1.25	0.625	20.0	1.09	0.67	0.38	1.94	0.5	1.33	1.27
1.4	0.7	22.4	1.23	0.75	0.42	2.17	0.56	1.49	1.42
1.5	0.75	24.0	1.31	0.8	0.45	2.33	0.6	1.6	1.52
1.6	0.8	25.6	1.4	0.86	0.48	2.48	0.64	1.71	1.62
1.75	0.875	28.0	1.53	0.94	0.53	2.71	0.7	1.87	1.77
1.8	0.9	28.8	1.58	0.96	0.54	2.79	0.72	1.92	1.82
2.0	1.0	32.0	1.75	1.07	0.6	3.1	0.8	2.14	2.03
2.2	1.1	35.2	1.93	1.18	0.66	3.41	0.88	2.35	2.23
2.25	1.125	36.0	1.97	1.21	0.68	3.49	0.9	2.4	2.28
2.4	1.2	38.4	2.1	1.29	0.72	3.72	0.96	2.56	2.43
2.5	1.25	40.0	2.19	1.34	0.75	3.88	1.0	2.67	2.53
2.6	1.3	41.6	2.28	1.39	0.78	4.03	1.04	2.78	2.63
2.75	1.375	44.0	2.41	1.47	0.83	4.26	1.1	2.94	2.78
2.8	1.4	44.8	2.45	1.5	0.84	4.34	1.12	2.99	2.84
3.0	1.5	48.0	2.63	1.61	0.9	4.65	1.2	3.2	3.04
3.25	1.625	52.0	2.84	1.74	0.98	5.04	1.3	3.47	3.29
3.4	1.7	54.4	2.98	1.82	1.02	5.27	1.36	3.63	3.44
3.5	1.75	56.0	3.06	1.88	1.05	5.43	1.4	3.74	3.54
4.0	2.0	64.0	3.5	2.14	1.2	6.2	1.6	4.27	4.05
4.5	2.25	72.0	3.94	2.41	1.35	6.98	1.8	4.8	4.56
5.0	2.5	80.0	4.38	2.68	1.5	7.75	2.0	5.34	5.06
5.5	2.75	88.0	4.81	2.95	1.65	8.53	2.2	5.87	5.57
6.0	3.0	96.0	5.25	3.21	1.8	9.3	2.4	6.41	6.08
6.5	3.25	104.0	5.69	3.48	1.95	10.08	2.6	6.94	6.58
7.0	3.5	112.0	6.13	3.75	2.1	10.85	2.8	7.47	7.09
7.5	3.75	120.0	6.56	4.02	2.25	11.63	3.0	8.01	7.59
8.0	4.0	128.0	7.0	4.29	2.4	12.4	3.2	8.54	8.10
lbs of a.i./gal			7.0	3.75	0.12	0.38	2.8	0.27	0.19

Not labeled at these rates

	Kyro®		
Fl Oz.	Acetochlor (7 lb/gal)	Topramezone (2.8 lb/gal)	Clopyralid (3 lb/gal)
35	0.87	0.59	2.91
45	1.12	0.76	3.74
60	1.49	1.01	4.98

Stinger® Herbicide	Stinger® HL Herbicide
1.0	0.6
1.67	1.0
3.0	1.8
4.0	2.4
5.0	3.0
10.67	6.4

Corn herbicide

Rotation

Crops	Accent® Q[2] herbicide	Basis® Blend[1] herbicide	Kyro® herbicide	Realm® Q herbicide	Resicore® REV herbicide	Resolve® Q[1] herbicide	Revulin® Q[1] herbicide	Steadfast® Q herbicide	SureStart® II herbicide
Alfalfa	12m*	10m*	10.5m*	10m*	10.5m*	10m*	10m*	10m*	SF*
Barley	4/8m*	9m	10.5m	9m	10.5m*	9m	8m	4/8m*	SF
Beans, Dry	10m	10m	18m	18m	18m	10m	18m	10m	SF*
Beans, Snap	10m	10m	18m	10m*	18m	10m	10m*	10m	26m*
Beets, Red	18m	18m	18m	18m	18m	18m	18m	18m	26m*
Beets, Sugar	10/18m*	10m*	18m	18m	18m	10m*	18m	10/18m*	26m*
Canola	10/18m*	10m*	18m	10m*	18m	10m*	10m*	10m*	26m*
Corn, Field	0	0	0*	0	0	0	0	0	0
Corn, Pop	–	10m*	0*	10m	0*	10m	0	10m*	SF
Corn, Seed	0	10m	0*	10m	0	10m	0	10m*	SF
Corn, Sweet	10m*	10m*	18m	10m	10.5m*	10m*	0*	10m*	18m*
Cotton	10m	1m*	12m	10m*	12m	1m*	10m	10m*	26m*
Oats	4/8m*	9m	10.5m	9m	10.5m*	9m	8m	4/8m*	SF
Peanuts	–	1.5m	18m	10m	18m	1.5m	10m*	18m	26m*
Peas	10m	10m	18m	10m*	18m	10m	10m*	10m	SF*
Potatoes	10/18m*	1m	18m	10m	18m	0	10m*	10m*	18m
Rice, Wild	–	18m	10.5m	18m	10.5m*	18m	18m	18m	SF
Rye	4/8m*	9m	10.5m	4/9m*	10.5m*	9m	4/8m*	4/8m*	SF
Sorghum	10/18m*	10m*	10.5m*	10m*	10.5m*	10m*	10m*	10/18m*	12m
Soybeans	15d	see label*	10.5m*	10m	10.5m*	see label*	10m	15d	SF*
Sunflower	11/18m*	10m	10.5m*	10m	10.5m*	10m	10m	10m*	18m
Tobacco	–	1.5m	18m	10m	18m	1.5m	10m*	18m	18m
Wheat	4/8m*	3/9m*	4m	4/9m*	4m	3/9m*	4/8m*	4/8m*	4m

*Refer to crop label

SF: Spring Following | **m:** Months | **d:** Days

1 Rotational crop intervals based on 1.25 oz/A per year. If greater than 1.25 oz/A per year, consult label for further crop rotations restrictions.

2 The following rotational intervals should be observed when using Accent Q at a maximum of 1.8 ounces. Reduced rotational intervals may be observed when using a single application of Accent Q per cropping season with a maximum use rate of 0.9 ounces product per year; see label.

FulTime® NXT

Rotational Crop Restrictions: When tank mixing with other herbicides, follow the most restrictive crop rotation guidelines on the label of each product used.

1. Do not rotate to food crops other than soybeans, corn, cotton, milo (grain sorghum), wheat or tobacco.

Rotation to Non-food Winter Cover Crops: Following harvest of food crops treated with this product, only non-food or non-feed winter cover crops (with the exception of wheat) may be planted. Do not graze or harvest rotational cover crops for food or animal feed for 18 months following the last application of this product. This prohibition does not apply to wheat, which may be planted 4 months following the last application of this product, or to nongrass animal feeds, which may be planted 9 months after the last application of this product.

The maximum atrazine broadcast application rates for corn & grain sorghum are as follows:

- If no atrazine was applied prior to corn or grain sorghum emergence, apply a maximum of 2 pounds active ingredient per acre.
- If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 pounds active ingredient per acre per calendar year.

Surpass® NXT

Rotational Crop Restrictions: When tank mixing with other herbicides, follow the most restrictive crop rotation guidelines on the label of each product used.

1. If a crop treated with this product is lost, field corn, seed corn, silage corn, popcorn, sweet corn or milo (sorghum) may be replanted immediately. When planting milo (sorghum), only use seed properly treated with a seed protectant or safener. Do not exceed a total of 3 pounds per acre of active ingredient if additional product is applied.
2. Nongrass animal feeds such as alfalfa, clover, kudzu, lespedeza, lupin, sanfoin, trefoil, and Vetch spp. may be planted 9 months after application. Wheat may be planted 4 months after application.
3. Rotate the next season to the following application to the following crops: soybeans, corn (all types), cotton, milo (sorghum), tobacco, sugar beets, sunflowers, potatoes, barley, buckwheat, millet (pearl and proso), oats, rye, teonsinte, triticale, wild rice, dried shelled bean group Lupinus spp. (including grain lupin, sweet lupin and white lupin); Phaseolius spp. (includes field bean, kidney bean, lima bean (dry), navy bean, pinto bean, tepary bean, bean); Vigna spp. (includes adzuki bean, blackeyed pea, catjang, cowpea, Crowder pea, moth bean, mung bean, rice bean, southern pea and urd bean); broad bean (dry) chickpea, guar, lablab bean, lentil, pea (Pisum spp, includes field pea); pigeon pea.

Rotation to Non-food Winter Cover Crops: Following harvest of food crops treated with Surpass NXT, only non-food or non-feed winter cover crops (with the exception of wheat) may be planted. Do not graze or harvest rotational cover crops for food or animal feed for 18 months following the last application of Surpass NXT. This prohibition does not apply to wheat, which may be planted 4 months following the last application of Surpass NXT, or to nongrass animal feeds, which may be planted 9 months after the last application of Surpass NXT.

Keystone® NXT | Keystone LA NXT

Rotational Crop Restrictions: When tank mixing Keystone NXT with other herbicides, follow the most restrictive crop rotation guidelines on the label of each product used.

1. If a crop treated with this product is lost, field corn, seed corn, silage corn, popcorn or sweet corn may be replanted immediately. Do not exceed a total of 3 pounds per acre of acetochlor if, additional product is applied.
2. If applied after June 10, do not rotate to crops other than corn or sorghum the next year, or crop injury may occur.
3. Rotate the next season to the following crops: corn (all types), cotton, sorghum or soybeans. Injury from atrazine may occur to soybeans planted the year following application on soils having a calcareous subsurface layer.
4. In the High Plains and Intermountain regions of the West where rainfall is sparse and erratic or irrigation is required, use only when corn or sorghum is to follow corn.
5. In Eastern parts of the Dakotas, Kansas, western Minnesota and Nebraska, do not rotate to soybeans if the rate applied to corn was more than 2 pounds active ingredient equivalent of atrazine or soybean injury may occur.
6. Do not plant sugar beets, sunflower, potatoes, tobacco, dry beans or peas, spring-seeded small grains or small-seeded legumes the year following application, or injury from atrazine may occur.

Rotation to Non-food Winter Cover Crops: Following harvest of food crops treated with Keystone NXT , only non-food or non-feed winter cover crops (with the exception of wheat) may be planted. Do not graze or harvest rotational cover crops for food or animal feed for 18 months following the last application of Keystone NXT. This prohibition does not apply to wheat, which may be planted 4 months following the last application of Keystone NXT , or to nongrass animal feeds, which may be planted 9 months after the last application of Keystone NXT.

Soybean Herbicide

Rate Conversions

	Enlite®			Envive®			Surveil®		Trivence®			Sonic®		Afforia®		
Oz.	Flumioxazin (51% WDG)	Chlorimuron-Ethyl (25% DG)	Thifensulfuron-Methyl (50% DG)	Flumioxazin (51% WDG)	Chlorimuron-Ethyl (25% DG)	Thifensulfuron-Methyl (50% DG)	Flumioxazin (51% WDG)	Cloransulam-methyl (84% DG)	Flumioxazin (51% WDG)	Chlorimuron-Ethyl (25% DG)	Metribuzin (75% DF)	Sulfentrazone (4 lb/gal)	Cloransulam-Methyl (84% DG)	Flumioxazin (51% WDG)	Tribenuron (50% DG)	Thifensulfuron-Methyl (50% DG)
0.1	0.07	0.01	0.02	0.06	0.04	0.006	0.071	0.014	0.025	0.016	0.06	0.124	0.009	0.08	0.01	0.01
0.25	0.18	0.03	0.04	0.14	0.09	0.01	0.18	0.04	0.06	0.04	0.15	0.31	0.02	0.2	0.03	0.03
0.5	0.36	0.06	0.09	0.29	0.18	0.03	0.35	0.07	0.13	0.08	0.30	0.62	0.05	0.40	0.05	0.05
1.0	0.71	0.12	0.18	0.57	0.37	0.06	0.71	0.14	0.25	0.16	0.60	1.24	0.10	0.80	0.10	0.10
2.0	1.42	0.23	0.35	1.14	0.74	0.11	1.41	0.29	0.50	0.31	1.19	2.48	0.19	1.60	0.20	0.20
2.5	1.78	0.29	0.44	1.43	0.92	0.14	1.76	0.36	0.63	0.39	1.49	3.11	0.24	2.00	0.25	0.25
2.8	1.99	0.32	0.49	1.60	1.03	0.16	1.97	0.40	0.70	0.44	1.67	3.48	0.26	2.24	0.28	0.28
3.0	2.13	0.35	0.53	1.71	1.11	0.17	2.12	0.43	0.75	0.47	1.79	3.73	0.28	2.40	0.30	0.30
3.25	2.31	0.37	0.57	1.86	1.20	0.19	2.29	0.46	0.82	0.51	1.93	4.04	0.31	2.60	0.33	0.33
3.5	2.49	0.40	0.61	2.00	1.29	0.20	2.47	0.50	0.88	0.55	2.08	4.35	0.33	2.80	0.35	0.35
4.0	2.84	0.46	0.70	2.29	1.47	0.23	2.82	0.57	1.00	0.62	2.38	4.97	0.38	3.20	0.40	0.40
4.5	3.2	0.52	0.79	2.57	1.66	0.26	3.17	0.64	1.13	0.70	2.68	5.59	0.42	3.60	0.45	0.45
5.0	3.55	0.58	0.88	2.86	1.84	0.29	3.53	0.71	1.26	0.78	2.98	6.21	0.47	4.00	0.50	0.50
6.0	4.26	0.69	1.05	3.43	2.21	0.34	4.23	0.86	1.51	0.94	3.57	7.45	0.56	4.80	0.60	0.60
6.4	4.54	0.74	1.12	3.66	2.36	0.37	4.51	0.91	1.61	1.00	3.81	7.95	0.60	5.12	0.64	0.64
7.0	4.97	0.81	1.23	4.00	2.58	0.40	4.94	1.00	1.76	1.09	4.17	8.70	0.66	5.60	0.70	0.70
8.0	5.68	0.92	1.40	4.57	2.95	0.46	5.64	1.14	2.01	1.25	4.76	9.94	0.75	6.40	0.80	0.80
9.0	6.39	1.04	1.58	5.14	3.32	0.51	6.35	1.28	2.26	1.40	5.36	11.18	0.85	7.20	0.90	0.90
10.0	7.10	1.15	1.75	5.71	3.69	0.57	7.05	1.43	2.51	1.56	5.95	12.42	0.94	8.00	1.00	1.00

	Kyber® Pro		
Pt.	Flumioxazin (51% WDG)	Metribuzin (75% DF/4F)	Pyroxasulfone (85% WDG/4.17SC)
1.0	1.96	4 / 6	1.51/2.46
1.25	2.45	5 / 7.5	1.88/3.07
1.5	2.94	6 / 9	2.26/3.68

	Sonic® Boom	
Fl Oz.	Sulfentrazone (4 lb/gal)	Metribuzin (75% DF/4F)
1.0	0.281	0.372/0.557
12.0	3.37	4.5/6.7
16.0	4.5	5.9/8.9
18.0	5.06	6.7/10
26.0	7.3	9.7/14.5

	Enversa™
Pt.	Acetochlor (lbs a.i.)
3.0	1.125

	Ridgeback® insecticide	
Fl Oz.	Sulfoxaflor (0.31 lb a.i./gal)	Bifenthrin (0.93 lbs a.i./gal)
1.0	0.078	0.465
8.6	0.667	4.0
10.3	0.798	4.79
11.0	0.853	5.12
13.8	1.07	6.42

	Viatude® fungicide	
Fl Oz.	Picoxystrobin (1.57 lbs a.i./gal)	protoconazole (0.52 lbs a.i. gal)
1.0	0.75	0.13
12.0	9.0	1.56
16.0	12.0	2.08

Soybean Herbicide
Rotation

Crops	Afforia® herbicide (2.5oz)	Elevore® herbicide	Enlist® herbicides	Enlite® herbicide	Enversa™ herbicide	Envive® herbicide	EverpreX® herbicide	Kyber® Pro herbicide	Sonic®[1,3] herbicide	Sonic® Boom herbicide	Surveil® herbicide	Trivence® herbicide
Alfalfa	4/8m*	9m	30d	10/12m*	9m	10m	4m	10m	12m	12m	10m	10m
Barley	3m	14d	30d	4m	FS*	4m	4.5m	11/12m*	12m	4m	–	4m
Beans, Dry	3m	9m	30d	9m	*[12]	12m	-	12m	9m	12m	9m	30m
Beans, Snap	3/4m*	15m	30d	9m	*[12]	12m	0	9/11m*	30m[2]	18m	9m	30m
Beets, Red	–	15m	30d	–	-	–	–	18m	30m[2]	24m[6]	–	–
Beets, Sugar	4/8m	15m	30d	–	FS*	18/30m*	–	18m	30m[2]	24m[6]	30m	–
Cabbage	4/8m*	–	30d	18m	-	18m	2m	18m	30m[2]	18m	–	18m
Canola	4/8m*	14d	30d	18m	-	18/30m*	–	18m	24m	24m	–	18/30m
Carrots	4/8m*	–	30d	30m	-	30m	2m*	18m	30m[2]	18m	–	18/30m
Corn, Field	0.5/1m*	3/14d*	7-14d*	9m	FS*	10m	0	7d/1m*	10m[1]	4m*	9m	10m
Corn, Pop	4/8m	*	30d	9/15m*	FS*	10m	0	18m	10m[1]	18m	9m	10m
Corn, Seed	4/8m*	*	30d	9m	FS*	10m	0	18m	10m[1]	4m*	9m[5]	10m
Corn, Sweet	3m	*	30d	9m*	FS*	18m	0	4m	10m[1]	18m	18m	18m
Cotton	30d*	30d	30d	9m	FS*	10/18m*	–	18m	18/12m[4]	12/18m*	9m	18m
Cucumbers	4/8m*	–	30d	9/18m*	-	18m	*	18m	30m[2]	18m	–	18m
Oats	4/8m*	14d	30d	10m	FS*	10m	4.5m	11/12m*	12m	18m	9m	18m
Peanuts	45d	9m	30d	6m*		8m	0	18m	12m	12m	9m	8/18m*
Peas	3m	9m	30d	9m	*[12]	12m	0	*	9m	18m	9m	12m
Potatoes	4/8m*	15m	30d	30m*	FS*	30m	0	9m	18m	12m	18m	18/30m
Rice	30d*	14d	30d	9m*	FS*	10m*	FS*	12m	10m	10m	9m	12m*
Rye	4/8m*	14d	30d	4m	FS*	4m	4.5m	11/12m*	12m	18m	–	12m
Sorghum	4/8m*	14d	30d	9/15m	FS*	12m	0	18m	12m	12/18m*	9m	18m
Soybeans	0	14d*	**Enlist One** 7-14d* **Enlist Duo** 30d	0	FS*	0	0	0	0	0	0	0
Sunflower	45d	14d	30d	9/18m*	FS*	18m	0	12m	30m[2]	12m	30m	18m
Tobacco	45d	15m	30d	9/15m*	FS*	10/12m*	FS*	12m	30m[3]	12m	30m[6]	18m
Wheat	1m*	14d	30d	3m	4m	4m	4.5m	8m*	4m	4m	3m	4m

1 Corn, including field, popcorn and seed corn: Observe an 18-month rotational interval if 6.45 - 8 oz of Sonic is applied to soil of 1.5% organic matter or less, and pH is above 7. Hybrid seed production: Corn inbred lines grown for hybrid seed production may be injured in the growing season following an application of FirstRate, Sonic or Surveil. Inbred lines should be thoroughly tested for crop tolerance before rotating to production scale acreages. Corteva Agriscience will not accept responsibility for any crop injury on field corn grown for seed following an application of FirstRate, Sonic or Surveil.

2 These crops require a 30-month rotational interval and a successful field bioassay.

3 Transplanted tobacco may be planted 10 months after application of a maximum application rate of 3 oz of Sonic per acre, 2.1 oz per acre of Surveil or 0.3 oz per acre of FirstRate. Tobacco in seedbed nurseries may be replanted 18 months after application of 3 oz of Sonic per acre or 2.1 oz of Surveil and following a successful field bioassay. A rotational interval of 30 months and a successful field bioassay is required for all applications of Sonic greater than 3 oz per acre or all applications of Surveil greater than 2.1 oz per acre.

4 Cotton may be planted after 12 months where Sonic was applied at rates 5 oz/acre or less and meets the following conditions:
- Medium and fine soils
- pH<7.2
- Rainfall or irrigation must exceed 15" after application of Sonic

5 At least one inch of rainfall/irrigation must occur between application and planting or crop injury may occur

6 Successful soil bioassay must be performed prior to planning alfalfa, canola, sugar beets and other crops not listed.

7 Minimum number of months that must pass before planting other crops after application of FirstRate at up to 0.75 oz per acre soil applied and/or 0.3 oz per acre postemergence.

8 Rotation to sugar beets and sunflowers require a 30-month rotation interval and a successful field bioassay.

9 Do not plant snap beans grown for commercial seed production.

10 Certain sweet corn varieties may be planted 10.5 months after application of up to 1 oz of Python WDG per acre. The interval applies only to varieties of sweet corn which have been identified as tolerant to an ALS inhibiting herbicide. Contact your local Corteva Agriscience representative for current approved varieties.

11 Rotation to sugar beets and canola require a 26-month rotation interval and a successful field bioassay.

12 DO NOT rotate to any species or variety of succulent bean or pea.

*Refer to crop label

FS: Following Spring | **DAT:** Days After Treatment | **m:** Months | **d:** Days

Cereal Herbicide

Rotation

Crops	GoldSky® herbicide	OpenSky® herbicide	PerfectMatch® herbicide	Pixxaro® EC herbicide	PowerFlex® HL herbicide	Quelex® herbicide	Rezuvant® herbicide	Starane® Flex herbicide	Starane® NXT herbicide	Starane® Ultra herbicide	Stinger® HL herbicide	Tarzec® herbicide	Tolvera™ herbicide	WideARmatch® herbicide	Widematch® herbicide
Alfalfa	10m	9m	10.5m	4m*	9m	9m	9m	4m*	*	4m	10.5m	9m	9m	10.5m*	10.5m
Barley	10m	9m	9m	0	9m	0	0	0	1m	0	0	9m	0	0	0
Beans, Dry	10m	9m	10.5m	9m	9m	9m	9m	9m	4m	4m	18m*	9m	9m	10.5m*	10.5m
Beans, Pinto, kidney, navy	10m	9m	10.5m	15m	9m	9m	9m	9m	4m	4m	18m*	9m	9m	10.5m*	10.5m
Beets, Sugar	10m	9m	9m	9m	9m	9m	9m	9m	4m	4m	0	9m	18m	9m	4m
Canola	10m	9m	9m	4m	9m	5/9m*	4m	9m	4m	4m	0	9m	9m	4m	4m
Corn, field	10m	9m	9m	3d	9m	3m	4m	3m	1m	0	0	9m	0	14d	0
Corn, pop	10m	9m	9m	4m	9m	3m	4m	3m	4m	4m	0	9m	0	4m	4m
Corn, seed	10m	9m	9m	4m	9m	3m	4m	3m	4m	4m	0	9m	0	4m	0
Corn, sweet	10m	9m	9m	3d	9m	3m	4m	3m	4m	0	0	9m	0	14d	0
Cotton	10m	9m	9m	4m	9m*	3m	4m	12m	4m	4m	18m*	9m*	9m	18m	18m
Flax	10m	9m	9m	9m	9m	9m	9m	9m	4m	4m	0	9m	9m	9m	4m
Lentils	10/18m	9m	18m	15m	9m	15m	15m	9m	4m	4m	18m*	15m	9m	18m	18m
Mustard, tame	10m	9m	9m	9m	9m	9m	9m	12m	4m	4m	0	9m	9m	9m	4m
Oats	10m	9m	9m	14d	9m	3m	4m	0	1m	0	0	9m	3m	14d	0
Peanut	10m	12m	18m	9m	9m	9m	9m	12m	4m	4m	18m	9m	9m	18m	18m
Peas	10/18m	9m	10.5m*	9m	9m	9m	9m	9m	4m	4m	18m*	9m	9m	10.5m*	10.5m*
Potatoes	10/18m*	9m	18m	10m*	9m	15m	10m*	9m	4m	4m	18m*	15m	9m*	18m	18m
Rice	12/18m*	12m	18m	4m	12m	3m	4m	12m	4m	4m	18m	15m	9m	18m	18m
Rye	12/18m*	9m	18m	4m	12m	3m	4m	0	4m	0	0	15m	3m	10.5m	0
Safflower	10m	9m	10.5m	9m	9m	9m	9m	9m	4m	4m	10.5m	9m	9m	10.5m*	10.5m
Sorghum	10m	9m	10.5m	14d	9m*	3m	4m	3m	1m	0	10.5m	9m*	9m	10.5m	10.5m*
Soybeans	10m	9m	10.5m	4m	5m*	3m	4m	9m	4m	4m	18m*	5m*	9m	10.5m*	10.5m
Sunflower	10m	9m	10.5m	4m	9m*	3m	4m	9m	4m	4m	18m*	9m*	9m	10.5m*	10.5m
Triticale	1m	1m	1m	0	1m	0	4m	0	1m	0	0	1m	3m	0	0

Crop Rotation Intervals for All States Except California, Idaho, Nevada, Oregon, Utah and Washington

Residues of WideMatch in treated plant tissues, including the treated crop or weeds, which have not completely decayed may affect succeeding susceptible crops.

*Refer to crop label

SF: Spring Following | **m:** Months | **d:** Days

Notes:

Corn herbicide

Tank-Mix Sequence Procedures

General Mixing Steps - Water as Carrier

1. **Read Labels:** Read all labels carefully. Contact manufacturers if you have any questions
2. **Shake Liquids:** Shake all containers with liquids before adding to ensure thorough mixing the formulation
3. **Add Water:** Fill tank with 50% of the required water volume
4. **Agitate:** Start agitation when the tank is half full — before adding the first product. Continue agitation through the mixing process
5. **Add in Order:** Add products to the tank based on their formulation type
6. **Wait & Check:** Wait 3–5 minutes after adding dry formulations before liquid formulation additions
7. **Add Water:** Add remaining water to the tank
8. **Measure pH:** Measure the pH and hardness of the solution

Maintain constant agitation during tank-mix preparation/application and allow enough time for each product to fully disperse prior to adding the next product. If water is cold, products will require additional time to disperse.

Liquid Carrier

1. **Start with tank ½-full with water or liquid fertilizer* carrier** (28%, 32% N)
2. **Begin agitation**
3. **Pre-Slurry Water-Soluble Packets** (WSP)
   With UAN: pre-slurry WSP in water prior to addition to tank
4. **Wettable Powders** (WP)**, Dry Flowables** (WDG, WG)
   - » **Accent**® Q herbicide
   - » **Basis**® Blend herbicide
   - » **Realm**® Q herbicide
   - » **Resolve**® Q herbicide
   - » **Revulin**® Q herbicide
   - » **Steadfast**® Q herbicide

   With UAN: pre-slurry WP/WDG/WG in water prior to addition to tank
5. **Water Conditioners**
   - » AMS
   - » AMS solution
6. **Compatibility Agent** (if needed)
7. **Nitrogen Stabilizer**
   - » **Instinct** NXTGEN® nitrogen stabilizer
8. **Capsule Suspension** (CS)**, Suspension Emulsion** (SE) **or ZC** (CS+SC)
   - » **FulTime**® NXT herbicide
   - » **Keystone**® NXT herbicide
   - » **Kyro**® herbicide
   - » **Resicore**® REV herbicide
   - » **SureStart**® II herbicide
9. **Suspension Concentrate** (SC)**, Liquid Flowables**
   - » Liquid Atrazine (Use a compatibility agent if needed, prior to the addition of liquid atrazine)
10. **Emulsifiable Concentrate** (EC)
    - » **Surpass**® NXT herbicide
11. **Soluble Liquids** (SL)
    - » **Enlist Duo**® herbicide**
    - » **Enlist One**® herbicide**
    - » Glyphosate products
    - » Gramoxone Extra herbicide

    When mixing with Enlist One: Do not pour glufosinate ammonium products or glyphosate potassium into the tank at the same time as Enlist One. Add products one at a time, using sufficient water and allowing enough time for recirculation between additions of each separate product.

    Note: If using paraquat containing product, add (NIS) to tank before adding paraquat product.
12. **Crop Oil Concentrate** (COC)**, Non-Ionic Surfactant** (NIS)**, Methylated Seed Oil** (MSO)**, Other Adjuvants**
13. **Ammonium Thiosulfate** (ATS)
14. **Biologicals, Micronutrients** (dilute 1:1 with water)
15. **Top off with liquid carrier**

*If using fertilizer as a carrier, ensure all tank-mix partners are compatible in that fertilizer.
Find qualified tank-mix products for Enlist herbicides at **EnlistTankMix.com. Nitrogen carriers cannot be used with Enlist herbicides.

CORTEVA™ agriscience

Soybean herbicide

Tank-Mix Sequence Procedures

General Mixing Steps - Water as Carrier

1. **Read Labels:** Read all labels carefully. Contact manufacturers if you have any questions
2. **Shake Liquids:** Shake all containers with liquids before adding to ensure thorough mixing the formulation
3. **Add Water:** Fill tank with 50% of the required water volume
4. **Agitate:** Start agitation when the tank is half full — before adding the first product. Continue agitation through the mixing process
5. **Add in Order:** Add products to the tank based on their formulation type
6. **Wait & Check:** Wait 3–5 minutes after adding dry formulations before liquid formulation additions
7. **Add Water:** Add remaining water to the tank
8. **Measure pH:** Measure the pH and hardness of the solution

Maintain constant agitation during tank-mix preparation/application and allow enough time for each product to fully disperse prior to adding the next product. If water is cold, products will require additional time to disperse.

Liquid Carrier

1. **Start with tank ½-full with water**
2. **Begin agitation**
3. **Water Conditioners**
   - » AMS
   - » AMS solution
4. **Wettable Powders** (WP)**, Dry Flowables** (WDG, WG)
   - » **Afforia**® herbicide
   - » **Envive**® herbicide
   - » **Enlite**® herbicide
   - » **Sonic**® herbicide
   - » **Surveil**® herbicide
   - » **Trivence**® herbicide

   Note: pre-slurry Sonic 5 minutes with a minimum of 1 gallon of water for each 7.5 lb. bottle of Sonic
5. **Compatibility Agent** (if needed)
6. **Liquid Flowables**
7. **Capsule Suspension** (CS)**, Suspension Emulsion** (SE)
   - » **Elevore**® herbicide
   - » **Enversa**™ herbicide
   - » **Kyber**® Pro herbicide
   - » **Sonic**® Boom herbicide
8. **Emulsifiable Concentrate** (EC)**, Oil Dispersions** (OD)
   - » **EverpreX**® herbicide
   - » 2,4-D ester
9. **Soluble Liquids** (SL)
   - » 2,4-D amine
   - » **Enlist Duo**® herbicide*
   - » **Enlist One**® herbicide*
   - » Glyphosate products
   - » Glufosinate ammonium
   - » Gramoxone SL 2.0 herbicide
   - » **Vydate**® C-LV insecticide/nematicide

   When mixing with Enlist One: do not pour glufosinate ammonium products or glyphosate potassium into the tank at the same time as Enlist One. Add products one at a time, using sufficient water and allowing enough time for recirculation between additions of each separate product.

   Note: *If using paraquat containing product, add (NIS) to tank before adding paraquat product.
10. **Crop Oil Concentrate** (COC)**, Non-Ionic Surfactant** (NIS)**, Methylated Seed Oil** (MSO)**, Other Adjuvants**
11. **Biologicals, Micronutrients** (dilute 1:1 with water)
12. **Top off with liquid carrier**

*If using fertilizer as a carrier, ensure all tank-mix partners are compatible in that fertilizer.
Find qualified tank-mix products for Enlist herbicides at **EnlistTankMix.com. Nitrogen carriers cannot be used with Enlist herbicides.

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Fungicide Classification

Repeated use of fungicides with the same mode of action can result in the selection of fungicide-resistant strains of plant pathogens.

Mode of Action (MOA)

This section groups fungicides by their mode of action to assist in the selection of fungicides to...
1) Maintain greater diversity in fungicide use
2) Rotate among effective fungicides with different modes of action to delay the development of fungicide resistance

Mode Of Action	FRAC Code	Chemical Family	Active Ingredient	Product Examples (Trade Name)
MITOSIS DISRUPTERS				
MBC (methyl benzimidazole carbamates) **B1:** ß-tubuline assembly in mitosis	1	**Thiophanates**	**thiophanate-methyl**	Topsin, *multiple generics and component in premix*
CELL MEMBRANE DISRUPTERS				
DMI (demethylation inhibitors)/ triazoles **G1:** C14- demethylase in sterol biosynthesis (erg11/cyp51)	3	**Triazoles**	**cyproconazole**	Alto *premix component*
			difenoconazole	Quadris Top, *Component* Miravis Top, *Component*
			flutriafol	Topguard *premix component* Xyway
			mefentrifluconazole	Revysol Revytek, *Component* Veltyma
			metconazole	Headline Amp, *Component*
			propiconazole	Tilt *multiple generics* *premix component*
			tebuconazole	Folicur *multiple generics* *premix component*
			tetraconazole	Domark *multiple generics* *premix component*
		Triazolinthiones	**prothioconazole**	Proline *premix component*
RESPIRATION INHIBITORS				
SDHI (succinate dehydrogenase inhibitors)/carboxamides **COMPLEX II:** succinate-dehydrogenase	7	**Pyridinecarboxamides**	**boscalid**	Endura
		Pyridinyl-ethylbenzamides	**fluopyram**	Propulse, *Component*
		Pyrazole-4-carboxamides	**benzovindiflupyr**	Trivapro, *Component*
			bixafen	Lucento, *Component*
			fluxapyroxad	Priaxor, *Component* Revytek
			penthiopyrad	**Vertisan**®
			pydiflumetofen	Adepidyn Miravis Top, *Component* Miravis Neo

Mode Of Action	FRAC Code	Chemical Family	Active Ingredient	Product Examples (Trade Name)
RESPIRATION INHIBITORS				
QoI (quinone outside inhibitors)/ strobilurins **C3 – COMPLEX III:** cytochrome bc1 (ubiquinol oxidase) at Qo site (cyt b gene)	11	Methoxy-acrylates	azoxystrobin	Quadris *multiple generics* *premix component*
			picoxystrobin	**Aproach**® fungicide *premix component*
		Dihyrdro-dioxazines	fluoxastrobin	Aftershock Evito Fluoxastrobin *premix component*
		Methoxy-carbamates	pyraclostrobin	Headline *premix component*
		Oximino-acetates	trifloxystrobin	*premix component*
OXIDATIVE PHOSPHORYLATION UNCOUPLERS				
Oxidative Phosphorylation Uncouplers	29	2,6-dinitroanilines	fluazinam	Omega
UNKNOWN				
UNKNOWN	P7	Phosphonates	phophorous acid and salts	*premix component*
MULTI-SITE CONTACT ACTIVITY				
Multi-Site Contact Activity	M1	Inorganic	copper *(different salts)*	Badge *multiple generics*
	M5	Chloronitriles *(Phthalonitriles)*	chlorothalonil	Bravo Weather Stik *multiple generics* *premix component*

Premix

This section lists premix fungicides by their trade names so you can identify the premix's component fungicides and their respective mode of action groups. Refer to the Mode of Action section for more information.

PREMIX	Active Ingredient	FRAC Code
Acropolis	thiophanate-methyl	1
	tetraconazole	3
Affiance	tetraconazole	3
	azoxystrobin	11
Aframe Plus	propiconazole	3
	azoxystrobin	11
Aproach® Prima	cyproconazole	3
	picoxystrobin	11
Avaris	propiconazole	3
	azoxystrobin	11
Azoxy Teb	tebuconazole	3
	azoxystrobin	11
Azoxyprop Xtra	propiconazole	3
	azoxystrobin	11

PREMIX	Active Ingredient	FRAC Code
Catamaran	potassium phosphite	P7
	chlorothalonil	M5
Cover Xl	propiconazole	3
	azoxystrobin	11
Custodia	tebuconazole	3
	azoxystrobin	11
Delaro	prothioconazole	3
	trifloxystrobin	11
Delaro Complete	prothioconazole	3
	trifloxystrobin	11
	fluopyram	7
Evito T	tebuconazole	3
	fluoxastrobin	11

Fungicide Classification
Continued

PREMIX	Active Ingredient	FRAC Code
Fortix	flutriafol	3
	fluoxastrobin	11
Froghorn	thiophanate-methyl	1
	tebuconazole	3
Headline Amp	pyraclostrobin	11
	metconazole	3
Lucento	flutriafol	3
	bixafen	7
Miravis Neo	pydiflumetofen	7
	azoxystrobin	11
	propiconazole	3
Miravis Top	difenoconazole	3
	pydiflumetofen	7
Muscle Adv	tebuconazole	3
	chlorothalonil	M5
Overrule	thiophanate-methyl	1
	tebuconazole	3
Preemptor	flutriafol	3
	fluoxastrobin	11
Priaxor	fluxapyroxad	7
	pyraclostrobin	11
Priaxor D	tetraconazole	3
	fluxapyroxad	7
	pyraclostrobin	11
Propulse	prothioconazole	3
	fluopyram	7

PREMIX	Active Ingredient	FRAC Code
Protocol	thiophanate-methyl	1
	propiconazole	3
Quadris Top Quadris Top Sbx	difenoconazole	3
	azoxystrobin	11
Quilt Quilt Xcel	propiconazole	3
	azoxystrobin	11
Revytek	mefentrifluconazole	3
	fluxapyroxad	7
	pyraclostrobin	11
Stratego Yld	prothioconazole	3
	trifloxystrobin	11
Topguard Eq	flutriafol	3
	azoxystrobin	11
Topsin Xtr	thiophanate-methyl	1
	tebuconazole	3
Trivapro	propiconazole	3
	benzovindiflupyr	7
	azoxystrobin	11
Veltyma	mefentrifluconazole	3
	pyraclostrobin	11
Viathon	tebuconazole	3
	potassium phosphite	P7
	fluoxastrobin	11
ZOLERA FX	tetraconazole	3

For more information and links to additional resources, visit **www.IWillTakeAction.com**

Fungicides are classified according to their mode of action, or numeric FRAC code. The list of FRAC codes was developed by the Fungicide Resistance Action Committee and is a technical classification of fungicide modes of action according to scientific data. For more information, please visit www.frac.info.

This chart was developed with funding from the soy checkoff.

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Insecticide Classification

Repeated use of insecticides with the same mode of action can result in the development of resistant insect populations in corn and/or soybeans.

Mode of Action (MOA)

This section groups fungicides by their mode of action to assist in the selection of insecticides to...

1) Maintain greater diversity in insecticides use

2) Rotate among effective insecticides with different modes of action to delay the development of insecticide resistance

Mode Of Action	Group	Chemical Family	Active Ingredient	Product Examples (Trade Name)	
NERVE AND MUSCLE ACTION					
Acetylcholinesterase inhibitors	1A	carbamates	aldicarb	AgLogic	
			carbaryl	Carbaryl	
			methomyl	Lannate LV	
	1B	organophosphate	acephate	Acephate 97	Orthene 97
			chlorpyrifos	Chlorpyrifos 4E AG Nufos 4E	Warhawk Whirlwind
			chlorethoxyfos	SmartChoice 5G, *component*	
			dimethoate	Dimate 4E	Dimethoate 4E
			malathion	Fyfanon ULV AG	Malathion 5
			phorate	Thimet 20G Lock n Load Thimet 20G SmartBox	
			tebupirimphos	Aztec, *component*	Defcon, *component*
			terbufos	Counter 15G SmartBox Counter 15G Lock n Load	
GABA-gated chloride channel blockers	2	phenylpyrazoles *(fiproles)*	fipronil	Regent 4SC	
Sodium channel modulators	3	pyrethroids pyrethrins	alpha-cypermethrin	Fastac CS	Fastac EC
			beta-cyfluthrin	Baythroid XL	
			bifenthrin	Bifenthrin 2EC Brigade 2EC Capture LFR Discipline 2EC	Ethos XB Fanfare EC Sniper Tundra EC
			cyfluthrin	Tombstone	Tombstone Helios
			deltamethrin	Batallion 0.2EC	Delta Gold
			esfenvalerate	Asana XL	
			gamma-cyhalothrin	Declare	Proaxis
			lambda-cyhalothrin	Grizzly Too Lamcap	Province Silencer Warrior II
		pyrethroids pyrethrins	permethrin	Ambush Arctic 3.2EC	PermaStar AG Perm-Up 3.2EC
			tefluthrin	Force Evo	Precept
			zeta-cypermethrin	Mustang Maxx	Respect EC

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AgLogic, Arctic 3.2EC, Asana XL, Batallion, Baythroid XL, Brigade 2EC, Capture, Counter, Declare, Delta Gold, Dimilin 2L, Discipline 2EC, Ethos XB, Fanfare EC, Fastac, Force Evo, Grizzly Too, Hero, Lamcap, Lannate LV, Mustang Maxx, PermaStar AG, Perm-Up 3.2EC, Proaxis, Regent 4SC, Silencer, Skyraider, Thimet 20G, Tombstone, Warhawk, Warrior II and Whirlwind are Restricted Use Pesticides.

Insecticide Classification

by Mode of Action (MOA) Continued

Take ACTION Insect-Resistance Management

NERVE AND MUSCLE ACTION					
Nicotinic acetylcholine receptor agonists	**4A**	**neonicotinoids**	**acetamiprid**	Assail 30SG	Intruder Max 70WP
			clothianidin	Belay Inovate*	NipsIt Inside* Poncho 600*
			imidacloprid	Acceleron* Admire Pro Alias 4F	Senator 600FS* Sherpa Wrangler
			thiamethoxam	Cruiser 5FS* CruiserMaxx	Vibrance* Upshot Soybeans*
	4C	**sulfoxamines**	**sufloxaflor**	Closer	**Transform®**
	4D	**butenolides**	**flupyradifurone**	Sivanto 200 SL	Sivanto Prime
Nicotinic acetylcholine receptor allosteric activators	**5**	**spinosyns** *(Naturalyte® Insect Control)*	**spinetoram**	**Delegate®**	**Radiant®** SC
			spinosad	**Blackhawk®**	**Entrust®**
Glutamate-gated chloride channel (GluCl) **allosteric modulators**	**6**	**avermectins milbemycins**	**abamectin**	**Agri-Mek SC**	**Avicta 500FS***
Chordotonal organ TRPV channel modulators	**9**	**pyropenes**	**afidopyropen**	**Sefina**	
Voltage-dependent sodium channel blockers	**22**	**indoxacarb**	**indoxacarb**	**Steward EC**	
Ryanodine receptor modulators	**28**	**diamides**	**chlorantraniliprole**	**Coragen**	**Vantacor**
			cyantraniliprole	**Fortenza***	
GROWTH REGULATION					
Mite growth inhibitors	**10**	**clofentezine hexythiazox**	**hexythiazox**	Onager	
		etoxazole	**etoxazole**	Zeal SC	Zeal WDG
Inhibitors of chitin biosynthesis	**15**	**benzoylureas**	**diflubenzuron**	Dimilin 2L	
			novaluron	Diamond	
Ecdysone receptor agonists	**18**	**diacylhydrazines**	**methoxyfenozide**	**Intrepid 2F®**	
Inhibitors of acetyl CoA carboxylase	**23**	**tetronic tetramic acid derivatives**	**spiromesifen**	Oberon 2SC	
			spirotetramat	Movento	
INSECT MIDGUT					
Microbial disruptors of insect midgut membranes	**11**	**Bacillus thuringiensis** *(Bt)*	**Bacillus thuringiensis** *(Bt), cry toxin*	Agree WG Biobit HP DiPel DF	DiPel ES Javelin XenTari DF
ENERGY METABOLISM					
Inhibitors of mitochondrial ATP synthase	**12**	**propargite**	**propargite**	Comite II	

* Insecticide seed treatments. These seed treatments may also include fungicides. Please refer to the Take Action Fungicide Classification Chart for fungicide MOA classification. Fungicide active ingredients in these seed treatments are not listed on this chart

Agri-Mek SC, Avicta and Comite II are Restricted Use Pesticides.

Premix

This section lists premix insecticides by their trade names so you can identify the premix's component insecticides and their respective site of action groups. Refer to the Mode of Action section for more information.

PREMIX	Active Ingredient	Group
Avicta Complete Corn*	abamectin	6
	thiamethoxam	4A
Avicta Complete Beans 500*	abamectin	6
	thiamethoxam	4A
Aztec	tebupirimphos	1B
	cyfluthrin	3
Besiege	lambda-cyhalothrin	3
	chlorantraniliprole	28
Bolton	chlorpyrifos	1B
	gamma-cyhalothrin	3
Brigadier	bifenthrin	3
	imidacloprid	4A
Defcon 2.1g	tebupirimphos	1B
	cyfluthrin	3
Elevest	chlorantraniliprole	28
	bifenthrin	3
Endigo ZC	lambda-cyhalothrin	3
	thiamethoxam	4A
Hero	zeta-cypermethrin	3
	bifenthrin	3
Intrepid Edge®	methoxyfenozide	18
	spinetoram	5

PREMIX	Active Ingredient	Group
Justice	acetamiprid	4A
	bifenthrin	3
Kilter	imidacloprid	4A
	lambda-cyhalothrin	3
Leverage 360	imidacloprid	4A
	beta-cyfluthrin	3
Match-Up	chlorpyrifos	1B
	bifenthrin	3
Smartchoice 5g	chlorethoxyfos	1B
	bifenthrin	3
Stallion	zeta-cypermethrin	3
	chlorpyrifos	1B
Steed	zeta-cypermethrin	3
	bifenthrin	3
Skyraider Swagger	bifenthrin	3
	imidacloprid	4A
Triple Crown	imidacloprid	4A
	zeta-cypermethrin	3
	bifenthrin	3
Tundra Supreme	chlorpyrifos	1B
	bifenthrin	3
Voliam Xpress	lambda-cyhalothrin	3
	chlorantraniliprole	28

For more information and links to additional resources, visit **www.IWillTakeAction.com**

Products listed in this chart are not necessarily labeled for use in all crops or use in all states. Consult the product label for registration and use information. Read and adhere to all label application instructions. This is not a comprehensive list and may exclude insecticides from the product examples.

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Herbicide Classification

Repeated use of herbicides with the same site of action can result in the development of herbicide-resistant weed populations.

Mode of Action (MOA)

This chart groups herbicides by their modes and sites of action to assist you in selecting herbicides to...

1) Maintain greater diversity in herbicide use

2) Rotate among effective herbicides with different sites of action to delay the development of herbicide resistance

Site Of Action	Group	# of Resistant Weeds	Chemical Family	Active Ingredient	Product Examples (Trade Name)	
LIPID SYNTHESIS INHIBITORS						
Accase Inhibitors (acetyl CoA carboxylase)	1	14	**Aryloxyphenoxypropionate** *(fops)*	**clodinafop**	Discover NG	
				cyhalofop	**Clincher**®	
				fenoxaprop	Ricestar HT, *others*	
				fluazifop	Fusilade DX	
				quizalofop	Assure II, *others*	
			Cyclohexanedione *(dims)*	**clethodim**	Select Max, *others*	
				sethoxydim	Poast	Poast Plus
			Phenylpyrazoline	**pinoxaden**	Axial XL	
LIPID SYNTHESIS INHIBITORS						
ALS Inhibitors (acetolactate synthase)	2	53	**Imidazolinone**	**imazamox**	Raptor	Beyond
				imazapic	Plateau	
				imazapyr	Arsenal	
				imazaquin	Scepter	
				imazethapyr	Pursuit	Newpath
			Pyrimidinyl benzoates	**bispyribac**	Regiment	
				pyrithiobac	**Staple**® LX	
			Sulfonylurea	**bensulfuron**	Londax	
				chlorimuron	Classic	
				chlorsulfuron	Glean	
				halosulfuron	Permit	Sandea
				iodosulfuron	Autumn	
				mesosulfuron	Osprey	
				metsulfuron	Ally	
				nicosulfuron	**Accent**® Q	**Zest**® WDG
				orthosulfamuron	Strada	
				primisulfuron	Beacon	
				prosulfuron	Peak	
				rimsulfuron	**Matrix**® SG	**Resolve**® Q
				sulfosulfuron	Outrider	
				thifensulfuron	Harmony	
				triasulfuron	Amber	
				tribenuron	Express	
				trifloxysulfuron	Envoke	
				triflusulfuron	UpBeet	

Site Of Action	Group	# of Resistant Weeds	Chemical Family	Active Ingredient	Product Examples (Trade Name)	
LIPID SYNTHESIS INHIBITORS						
ALS Inhibitors (acetolactate synthase)	2	53	Triazolinones	flucarbazone	Everest	Pre-Pare
				propoxycarbazone	Olympus	
				thiencarbazone	Varro	
			Triazolopyrimidine - Type 1	cloransulam	**FirstRate**®	
				florasulam	**Quelex**®	**Starane**® Flex
				flumetsulam	Python	
			Triazolopyrimidine - Type 2	penoxsulam	Grasp	
				pyroxsulam	**PowerFlex**® HL	
EPSP Synthase Inhibitor (5-enolpyruvyl-shikimate-3-phosphate)	9	18	Glycine	glyphosate	Roundup, *several others*	
GROWTH REGULATORS						
Synthetic Auxins (TIR1, AFB1-5 and unknown auxin receptors)	4	11	6-Arylpicolinates	florpyrauxifen	**Loyant**®	
				halauxifen	**Elevore**®	
			Benzoate	dicamba	Banvel Clarity	DiFlexx, *others*
			Phenoxy carboxylate	2,4-D	**Enlist One**® herbicide	
				MCPA	MCPA, *others*	
			Pyridine carboxylate	aminopyralid	Milestone	
				clopyralid	**Stinger**®	
				halauxifen	**Elevore**®	
			Pyridyloxy carboxylate	fluroxypyr	**Starane**® Ultra	
				triclopyr	**Garlon**® XRT	**Remedy**® Ultra
			Quinoline carboxylate	quinclorac	Facet	
Auxin Transport Inhibitor	19	0	Aryl carboxylate	diflufenzopyr	Status, *component*	
PHOTOSYNTHESIS INHIBITORS						
Photosystem II Inhibitors (D1 Serine 264 binders and non-histidine 215 binders)	5	28	Amide	propanil	SuperWham	
			Triazine	atrazine	AAtrex, *others*	
				ametryn	Evik	
				prometon	Pramitol	
				prometryn	Caparol	
				simazine	Princep	
			Triazinone	hexazinone	Velpar	
				metribuzin	Metribuzin, *others*	
			Uracil	terbacil	Sinbar	
			Urea	diuron	Direx	Karmex
				fluometuron	Cotoran	
				linuron	Lorox	Linex
				tebuthiuron	**Spike**® 20P	
Photosystem II Inhibitors (D1 Histidine 215 binders)	6	1	Benzothiadiazinone	bentazon	Basagran, *others*	
			Nitrile	bromoxynil	Maestro	Moxy
			Phenyl pyridazine	pyridate	Tough	

AAtrex, Clarity, Diflexx and Status are Restricted Use Pesticides.

Herbicide Classification
by Mode of Action (MOA) Continued

Site Of Action	Group	# of Resistant Weeds	Chemical Family	Active Ingredient	Product Examples (Trade Name)	
NITROGEN METABOLISM INHIBITOR						
Glutamine Synthetase Inhibitor	10	3	Phosphinic acid	glufosinate	Liberty	Rely, *others*
PIGMENT INHIBITORS						
Phytoene Desaturase Inhibitors (PDS)	12	1	Diphenyl heterocycle	fluridone	Brake	Sonar
			N-Phenyl heterocycle	norflurazon	Solicam	
			Phenyl ether	diflufenican	–	
Doxp Synthase Inhibitor (1-Deoxy-D-Xylulose 5-Phosphate)	13	2	Isoxazolidinone	clomazone	Command 3ME	
HPPD Inhibitors	27	3	Isoxazole	isoxaflutole	Alite 27	Balance Flexx
			Pyrazole	pyrasulfotole	Huskie, *component*	
				topramezone	Armezon	Impact
				tolpyralate	**Tolvera**®	
			Triketone	bicyclopyrone	Optogen	
				mesotrione	Callisto	
				tembotrione	Laudis	
CELL MEMBRANE DISRUPTERS						
PPO Inhibitors	14	6	Diphenyl ether	acifluorfen	Ultra Blazer	
				fomesafen	Flexstar	Reflex
				lactofen	Cobra	Phoenix
			N-Phenyl imide	flumiclorac	Resource	
				flumioxazin	Valor	Chateau
				fluthiacet	Cadet	
				saflufenacil	Sharpen	
				tiafenacil	Reviton	Gamma
			N-Phenyl triazolinone	carfentrazone	Aim	
				sulfentrazone	Spartan	
Photosystem I Electron Diverter	22	6	Pyridinium	diquat	Reglone	
				paraquat	Gramoxone SL	
SEEDLING ROOT GROWTH INHIBITORS						
Microtubule Assembly Inhibitors	3	6	Benzamide	pronamide	**Kerb**®	
			Dinitroaniline	ethalfluralin	Prowl H2O, *others*	
				pendimethalin	Treflan, *others*	
				trifluralin	**Dimension**®	
			Pyridine	dithiopyr	Sonalan	
SEEDLING SHOOT GROWTH INHIBITORS						
Very Long-Chain Fatty Acid Synthesis Inhibitors	15	8	Benzofurane	ethofumesate	Nortron	

Alite 27, Balance Flexx, Callisto and Gramoxone SL are Restricted Use Pesticides.

Site Of Action	Group	# of Resistant Weeds	Chemical Family	Active Ingredient	Product Examples (Trade Name)	
SEEDLING SHOOT GROWTH INHIBITORS						
Very Long-Chain Fatty Acid Synthesis Inhibitors	15	8	Chloroacetamide	acetochlor	Harness	**Surpass®**
				dimethenamid-P	Outlook	
				s-metolachlor	Dual Magnum, *others*	
			Isoxazoline	pyroxasulfone	Zidua	
			Oxyacetamide	flufenacet	Define	
			Thiocarbamate	cycloate	Ro-Neet	
				EPTC	Eradicane	Eptam
				thiobencarb	Bolero	
				triallate	Far-Go	
Cellulose Biosynthesis Inhibitors	29	3	Aylkylazine	indaziflam	Alion	Esplanade
			Benzamide	isoxaben	**Gallery®**	**Trellis®**
UNDEFINED						
UNKNOWN	0	1	Amide	napropamide	Devrinol	
			Arsenical	MSMA	MSMA	

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 for more information.

PREMIX	COMPONENT		
	Active ingredient	Trade Name	Group
Acuron	bicyclopyrone	Optogen	27
	mesotrione	Callisto	27
	atrazine	AAtrex	5
	s-metolachlor	Dual II Magnum	15
Acuron Flexi	bicyclopyrone	Optogen	27
	mesotrione	Callisto	27
	s-metolachlor	Dual II Magnum	15
Acuron GT	bicyclopyrone	Optogen	27
	mesotrione	Callisto	27
	s-metolachlor	Dual Magnum	15
	glyphosate	glyphosate	9
Affinity Broadspec *(Affinity Tankmix)*	thifensulfuron	Harmony	2
	tribenuron	Express	2
Ally Extra	thifensulfuron	Harmony	2
	tribenuron	Express	2
	metsulfuron	Ally	2
Anthem Flex	pyroxasulfone	Zidua	15
	carfentrazone	Aim	14
Anthem Maxx	pyroxasulfone	Zidua	15
	fluthiacet	Cadet	14
Armezon Pro	topramezone	Armezon	27
	dimethenamid-P	Outlook	15
Authority Assist	sulfentrazone	Spartan	14
	imazethapyr	Pursuit	2

PREMIX	COMPONENT		
	Active ingredient	Trade Name	Group
Authority Edge	sulfentrazone	Spartan	14
	pyroxasulfone	Zidua	15
Authority First	sulfentrazone	Spartan	14
	cloransulam	FirstRate	2
Authority Supreme	sulfentrazone	Spartan	14
	pyroxasulfone	Zidua	15
Authority Xl	sulfentrazone	Spartan	14
	chlorimuron	Classic	2
Autumn Super	iodosulfuron	Autumn	2
	thiencarbazone	Varro	2
Axial Bold	pinoxaden	Axial XL	1
	fenoxaprop	Ricestar	1
Axial Star	pinoxaden	Axial XL	1
	fluroxypyr	**Starane®**	4
Basis® Blend	rimsulfuron	Resolve	2
	thifensulfuron	Harmony	2
Bicep II Magnum	s-metolachlor	Dual II Magnum	15
	atrazine	AAtrex	5
Boundary	s-metolachlor	Dual Magnum	15
	metribuzin	Metribuzin	5
Broadaxe XC	s-metolachlor	Dual Magnum	15
	sulfentrazone	Spartan 4F	14
Bronate Advanced	bromoxynil	Maestro	6
	MCPA	MCPA	4

AAtrex, Acuron, Anthem, Bicep II Magnum, Callisto and Harness are Restricted Use Pesticides.

Herbicide Classification

by Premix Continued

PREMIX	COMPONENT		
	Active ingredient	Trade Name	Group
Calibra	s-metolachlor	Dual II Magnum	15
	mesotrione	Callisto	27
Callisto Gt	mesotrione	Callisto	27
	glyphosate	glyphosate	9
Callisto Xtra	mesotrione	Callisto	27
	atrazine	AAtrex	5
Capreno	thiencarbazone	Varro	2
	tembotrione	Laudis	27
Carnivore	MCPA	MCPA	4
	fluroxypyr	Starane	4
	bromoxynil	Maestro	6
Cheetah Max	glufosinate	Liberty	10
	fomesafen	Reflex	14
Clearpath	quinclorac	Facet	4
	imazethapyr	Newpath	2
Colt As	clopyralid	**Stinger**®	4
	fluroxypyr	Starane	4
Corvus	thiencarbazone	Varro	2
	isoxaflutole	Balance Flexx	27
Coyote	s-metolachlor	Dual II Magnum	15
	mesotrione	Callisto	27
Curtail®	clopyralid	**Stinger**	4
	2,4-D	2,4-D	4
Curtail® M	clopyralid	**Stinger**	4
	MCPA	MCPA	4
Degree Xtra	acetochlor	Degree	15
	atrazine	AAtrex	5
Diflexx Duo	dicamba	DiFlexx	4
	tembotrione	Laudis	27
Dimetric Charged	metribuzin	Metribuzin	5
	flumioxazin	Valor	14
Enlist Duo	2,4-D	2,4-D	4
	glyphosate	glyphosate	9
Enlite	chlorimuron	Classic	2
	thifensulfuron	Harmony	2
	flumioxazin	Valor	14
Envive®	chlorimuron	Classic	2
	thifensulfuron	Harmony	2
	flumioxazin	Valor	14
Fierce EZ	flumioxazin	Valor	14
	pyroxasulfone	Zidua	15
Fierce MTZ	flumioxazin	Valor	14
	pyroxasulfone	Zidua	15
	metribuzin	Metribuzin	5
Fierce XLT	flumioxazin	Valor	14
	pyroxasulfone	Zidua	15
	chlorimuron	Classic	2

PREMIX	COMPONENT		
	Active ingredient	Trade Name	Group
Finesse	chlorsulfuron	Glean	2
	metsulfuron	Ally	2
Firstshot	thifensulfuron	Harmony	2
	tribenuron	Express	2
Flexstar GT	fomesafen	Flexstar	14
	glyphosate	glyphosate	9
Fultime® NXT	acetochlor	**TopNotch**®	15
	atrazine	AAtrex	5
Fusion	fluazifop	Fusilade DX	1
	fenoxaprop	Puma	1
Goldsky®	pyroxsulam	**PowerFlex**® HL	2
	florasulam	–	2
	fluroxypyr	**Starane**®	4
GrazonNext® HL	aminopyralid	Milestone	4
	2,4-D	2,4-D	4
Halex GT	s-metolachlor	Dual Magnum	15
	mesotrione	Callisto	27
	glyphosate	glyphosate	9
Harmony Extra	thifensulfuron	Harmony	2
	tribenuron	Express	2
Harness Max	acetochlor	Harness	15
	mesotrione	Callisto	27
Harness XTRA	acetochlor	Harness	15
	atrazine	AAtrex	5
Hornet	clopyralid	**Stinger**	4
	flumetsulam	Python	2
Huskie	pyrasulfotole	–	27
	bromoxynil	Maestro	6
Huskie Complete	pyrasulfotole	–	27
	bromoxynil	Maestro	6
	thiencarbazone	Varro	2
Huskie Fx	pyrasulfotole	–	27
	bromoxynil	Maestro	6
	fluroxypyr	**Starane**® Ultra	4
Impact Core	acetochlor	Harness	15
	topramezone	Impact	27
Impactz	atrazine	AAtrex	5
	topramezone	Impact	27
Intermoc	glufosinate	Liberty	10
	s-metolachlor	Dual Magnum	15
Katagon	nicosulfuron	**Accent**® Q	2
	tolpyralate	Shieldex	27
Keystone® NXT	acetochlor	**Surpass**® NXT	15
	atrazine	AAtrex	5
Kochiavore	2,4-D	2,4-D	4
	fluroxypyr	Starane	4
	bromoxynil	Maestro	6

AAtrex, Balance Flexx, Callisto, Clarity, Degree XTRA, Diflexx, Harness and Impactz are Restricted Use Pesticides.

PREMIX	COMPONENT		
	Active ingredient	Trade Name	Group
Kyber®	flumioxazin	Valor	14
	pyroxasulfone	Zidua	15
	metribuzin	Metribuzin	5
Kyro®	acetochlor	**Surpass** NXT	15
	topramezone	Impact	27
	clopyralid	**Stinger**®	4
Lexar Ez	mesotrione	Callisto	27
	s-metolachlor	Dual II Magnum	15
	atrazine	AAtrex	5
Lumax Ez	mesotrione	Callisto	27
	s-metolachlor	Dual II Magnum	15
	atrazine	AAtrex	5
Maverick	pyroxasulfone	Zidua	15
	clopyralid	Stinger	4
	mesotrione	Callisto	27
Novixid®	florpyrauxifen	**Loyant**®	4
	penoxsulam	**Grasp**®	2
Obey	clomazone	Command 3ME	13
	quinclorac	Facet	4
Opensky®	pyroxsulam	**PowerFlex**® HL	2
	fluroxypyr	**Starane**® Ultra	4
Orion	florasulam	–	2
	MCPA	MCPA	4
Osprey Xtra	mesosulfuron	Osprey	2
	thiencarbazone	Varro	2
Panoflex	thifensulfuron	Harmony	2
	tribenuron	Express	2
Perfectmatch®	clopyralid	**Stinger**	4
	fluroxypyr	**Starane**® Ultra	4
	pyroxsulam	**PowerFlex**® HL	2
Permit Plus	thifensulfuron	Harmony	2
	halosulfuron	Permit	2
Perpetuo	flumiclorac	Resource	14
	pyroxasulfone	Zidua	15
Pixxaro® EC	fluroxypyr	**Starane**®	4
	halauxifen	**Elevore**®	4
Prefix	s-metolachlor	Dual Magnum	15
	fomesafen	Reflex	14
Quelex®	halauxifen	**Elevore**®	4
	florasulam	–	2
Rave	triasulfuron	Amber	2
	dicamba	Clarity	4
Realm® Q	rimsulfuron	Resolve	2
	mesotrione	Callisto	2
RebelEX®	cyhalofop	**Clincher**®	1
	penoxsulam	**Grasp**®	2
Resicore® Rev	clopyralid	**Stinger**	4
	acetochlor	**Surpass** NXT	15
	mesotrione	Callisto	27
Resolve Q	rimsulfuron	Resolve	2
	thifensulfuron	Harmony	2

PREMIX	COMPONENT		
	Active ingredient	Trade Name	Group
Restraint	acetochlor	Harness	15
	tolpyralate	Shieldex	27
Revulin® Q	nicosulfuron	**Accent**® Q	2
	mesotrione	Callisto	27
Rezuvant®	halauxifen	**Elevore**	4
	fluroxypyr	**Starane** Ultra	4
	pinoxaden	Axial XL	1
Rimfire Max	propoxycarbazone	Olympus	2
	mesosulfuron	Osprey	2
Sentrallas	thifensulfuron	Harmony	2
	fluroxypyr	Starane	4
Sequence	s-metolachlor	Dual Magnum	15
	glyphosate	glyphosate	9
Sinate	glufosinate	Liberty	10
	topramezone	Impact	27
Solstice	mesotrione	Callisto	27
	fluthiacet	Cadet	14
Sonic®	sulfentrazone	Spartan	14
	cloransulam	FirstRate	2
Spartan Charge	sulfentrazone	Spartan	14
	carfentrazone	Aim	14
Starane® Flex	florasulam	–	2
	fluroxypyr	**Starane**®	4
Starane® NXT	fluroxypyr	**Starane**	4
	bromoxynil	Maestro	6
Status	diflufenzopyr	–	19
	dicamba	Clarity	4
Steadfast® Q	nicosulfuron	**Accent**® Q	2
	rimsulfuron	**Resolve**®	2
Storen	bicyclopyrone	Optogen	27
	mesotrione	Callisto	27
	s-metolachlor	Dual II Magnum	15
	pyroxasulfone	Zidua	15
Storm	bentazon	Basagran	6
	acifluorfen	Ultra Blazer	14
Supremacy	fluroxypyr	**Starane**	4
	thifensulfuron	Harmony	2
	tribenuron	Express	2
Surestart® II	acetochlor	**Surpass**® NXT	15
	clopyralid	**Stinger**®	4
	flumetsulam	Python	2
Surtain	saflufenacil	Sharpen	14
	pyroxasulfone	Zidua	15
Surveil®	flumioxazin	Valor	14
	cloransulam	FirstRate	2
Synchrony® XP	chlorimuron	Classic	2
	thifensulfuron	Harmony	2
Talinor	bromoxynil	Maestro	6
	bicyclopyrone	Optogen	27
Tarzec®	pyroxsulam	**PowerFlex**® HL	2
	halauxifen	**Elevore**	4

AAtrex, Callisto, Clarity, Harness, Lexar EZ, Lumax EZ and Status are Restricted Use Pesticides.

Herbicide Classification

by Premix Continued

PREMIX	COMPONENT		
	Active ingredient	Trade Name	Group
Tendovo	s-metholachlor	Dual Magnum	15
	cloransulam	FirstRate	2
	metribuzin	Metribuzin	5
Tolvera®	bromoxynil	Maestro	6
	tolpyralate	Shieldex	27
Tripleflex II	acetochlor	Harness	15
	clopyralid	**Stinger**	4
	flumetsulam	Python	2
Tripzin ZC	pendimethalin	Prowl	3
	metribuzin	Metribuzin	5
Trivence®	chlorimuron	Classic	2
	flumioxazin	Valor	14
	metribuzin	Metribuzin	5
Trivolt	flufenacet	Define	15
	isoxaflutole	Balance Flexx	27
	thiencarbazone	Varro	2
Valor Xlt	flumioxazin	Valor	14
	chlorimuron	Classic	2
Varisto	imazamox	Raptor	2
	bentazon	Basagran	6
Velpar Alfamax	hexazinone	Velpar	5
	diuron	Karmex	5
Verdict	saflufenacil	Sharpen	14
	dimethenamid-P	Outlook	15

PREMIX	COMPONENT		
	Active ingredient	Trade Name	Group
Vios Fx	thifensulfuron	Harmony	2
	fluroxypyr	Starane	4
Warrant Ultra	fomesafen	Reflex	14
	acetochlor	Warrant	15
Weld	MCPA	MCPA	4
	fluroxypyr	Starane	4
	clopyralid	Stinger	4
WideARmatch®	clopyralid	**Stinger**	4
	fluroxypyr	**Starane**	4
	halauxifen	**Elevore**®	4
WideMatch®	clopyralid	**Stinger**	4
	fluroxypyr	**Starane**	4
Wolverine Advanced	fenoxaprop	Tacoma	1
	pyrasulfotole	–	27
	bromoxynil	Maestro	6
Yukon	dicamba	Banvel	4
	halosulfuron	Permit	2
Zalo	quizalofop	Assure II	1
	glufosinate	Liberty	10
Zidua Pro	imazethapyr	Pursuit	2
	saflufenacil	Sharpen	14
	pyroxasulfone	Zidua	15
Zone Defense	flumioxazin	Valor	14
	sulfentrazone	Spartan	14

For more information and links to additional resources, visit **www.IWillTakeAction.com**

Check for a label and Material Safety Data Sheet at www.cdms.net to confirm status. This chart contains some restricted use pesticides. Always consult label prior to use.

This chart was developed with funding from the soy checkoff.

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*A minimum of $5,000 deposit is needed to open a TruChoice prepay account. Funds can be collected Oct. 1, 2025 – Feb. 27, 2026.

Product Recommendations: Missouri and Kansas

Broadleaf Weed Control With Residual on Your Pastures

Product	Weeds controlled	Rate (per acre)	Other
DuraCor® herbicide	Wild parsnip, Musk/ Bull thistle, Ironweed, Vervain, Ragweed, Poison hemlock, Dandelion, Wild Carrot, Common vetch, and others	16-20 fl oz	Next generation weed control on 140 weeds—non restricted use, low odor, low volatility, with new Rinskor® active (Group 4), provides residual weed control deep into season, no grazing restrictions, supplemental labeling for haying in many states (always refer to product label), Mixes well with UAN.
	Canada thistle and other perennial species	18-20 fl oz	Pasture weed and feed; harness the win-win power of both technologies. In approved states, get pasture weed control and fertilization in a single step via dry fertilizer impregnated with DuraCor® herbicide.
Chaparral™ herbicide	Canada thistle, Common mullein, Poison hemlock, Curlycup gumweed	2.5-3.3 oz	Broadest spectrum weed and brush control for R&P available in one container
	Musk/ Bull thistle and other annual species	2 oz	No applicator license is required for purchase or application
GrazonPD3™ herbicide	Canada thistle, Common mullein, Poison hemlock, Curlycup gumweed, and others	1.25-5 pts	Broad spectrum herbicide that controls 70+ weeds.

- Use higher labeled rates when weeds are at mature growth stage
- Surfactant, or MSO: Use high quality 90% NIS at 1-2 quarts/100 gal of water

GrazonPD3™ Herbicide Spray Tank Conversion Chart

Use the following chart to know how much GrazonPD3 you need to add to your tank compared to Grazon® P+D at the standard rate of 32 fl oz/Acre

	AT 10 GPA			AT 15 GPA			AT 20 GPA		
TANK SIZE (GAL)	Acres Treated	Grazon® P+D herbicide @ 32 fl oz	GrazonPD3™ herbicide @ 20 fl oz	Acres Treated	Grazon P+D @ 32 fl oz	GrazonPD3 @ 20 fl oz	Acres Treated	Grazon P+D @ 32 fl oz	GrazonPD3 @ 20 fl oz
50	5	1.25 gal	0.78 gal	3.3	0.83 gal	0.52 gal	2.5	0.62 gal	0.39 gal
100	10	2.5 gal	1.56 gal	6.7	1.68 gal	1.03 gal	5	1.25 gal	0.78 gal
150	15	3.75 gal	2.34 gal	10.0	2.5 gal	1.56 gal	7.5	1.88 gal	1.17 gal
200	20	5 gal	3.13 gal	13.3	3.33 gal	2.08 gal	10	2.5 gal	1.56 gal
250	25	6.25 gal	3.91 gal	16.7	4.17 gal	2.6 gal	12.5	3.13 gal	1.95 gal
300	30	7.5 gal	4.69 gal	20.0	5 gal	3.13 gal	15	3.75 gal	2.34 gal
350	35	8.75 gal	5.47 gal	23.3	5.83 gal	3.65 gal	17.5	4.38 gal	2.73 gal
500	50	12.5 gal	7.81 gal	33.3	8.33 gal	5.21 gal	25	6.25 gal	3.91 gal
1000	100	25 gal	15.63 gal	66.7	16.67 gal	10.42 gal	50	12.5 gal	7.81 gal

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Product Recommendations: Missouri and Kansas

Broadleaf Weed Control Without Residual on Your Pastures

Product	Weeds controlled	Usage recommendation	Other
NovaGraz® herbicide	Buttercup, Cocklebur, Common Ragweed, Musk Thistle, Plantain, Chicory, Poison hemlock	**NovaGraz®** herbicide *24 fl oz/A* **+** MSO	• Preserves White Clover and Annual lespedeza
PastureGard® HL herbicide	Pastures with Mixed Brush, Trees, and Weeds Sericea lespedeza	**PastureGard®** herbicide *1 - 4 pt/A* **+ DuraCor®** herbicide *12 - 20 fl oz/A* **+** v/v NIS *0.25%* *(DuraCor adds residual)*	• Controls Broadleaf Weeds and Many Woody Plants • Brush control along fence rows and non-irrigation ditch banks • No Soil Residual Activity • Does Not Contain 2,4-D • No Grazing Restrictions for Any Livestock Species

Product	Weeds controlled	Usage recommendation	Other
Remedy® herbicide	Pastures with Mixed Brush, Trees, and Weeds Multiflora Rose, Hedge (Osage Orange), Honey & Black locust, and Sumac	**Remedy®** herbicide *1.5 pt/A* **+ DuraCor®** herbicide *16 - 20 fl oz/A* **+** v/v NIS *0.25%*	Make applications once trees and brush have fully expanded leaves but prior to fall leaf senescence (June-August)
	Cut Stump and Low Volume Basal Bark Treatments	Same Mix for Both: **Remedy** *25%* **+** Basal Oil or Diesel *75%*	Application can be made any time of the year. However, avoid periods of heavy sap flow or when snow or water prevents spraying the ground line.

Cut Stump: Cut the tree low to the ground then treat the top, outer cambium layer of stump and any exposed roots as well as remaining bark.

Basal Bark Application:

- Standing Trees 6 inches or less in diameter.
- Treat the bottom 15 inches of the tree stem all the way around.
- After treatment allow trees to stand for at least 60 days during the growing season before removing.

SPOT SPRAY CHART

PLEASE VERIFY THAT THE TARGET WEED IS ON THE HERBICIDE LABEL

Tank Size / Volume Mixed* (Recommended Rates Given for Each Volume are Rounded for Easy Measurement)

Herbicide	1 gal.	5 gal.	15 gal.	25 gal.	40 gal.	60 gal.	100 gal.	Concentration
DuraCor® (weed control)	0.5 oz.	3.0 oz.	9.5 oz.	1 pt.	26 oz.	38 oz.	2 qts.	0.50%
Remedy® (woody plant control)	1.25 oz.	6.5 oz.	19 oz.	1 qt.	1.5 qt.	2.5 qt.	1 gal.	1.0%
PastureGard® HL (woody plant control)	1.25 oz.	6.5 oz.	19 oz.	1 qt.	1.5 qt.	2.5 qt.	1 gal.	1.0%

COMMON TANK MIXES FOR TREES, BRUSH, & WEEDS

Tank Size / Volume Mixed* (Recommended Rates Given for Each Volume are Rounded for Easy Measurement)

Herbicide	1 gal.	5 gal.	15 gal.	25 gal.	40 gal.	60 gal.	100 gal.	Concentration
DuraCor	0.5 oz.	3.0 oz.	9.5 oz.	1 pt.	26 oz.	38 oz.	2 qts.	0.50%
+ Remedy	1 oz.	5 oz.	15oz	25 oz.	40 oz.	60 oz.	3 qt.	0.75%

***WITH ALL OF THE ABOVE VOLUMES ADD SURFACTANT AT THE RATE OF 1 qt / 100 gallons of water**

*Yellow Highlighted Indicates Preferred Non-Restricted Use Treatments

Tank Size / Volume Mixed* (Recommended Rates Given for Each Volume are Rounded for Easy Measurement)

Herbicide	1 gal.	5 gal.	15 gal.	25 gal.	40 gal.	60 gal.	100 gal.	Concentration
Surmount® (RESTRICTED)	2.5 oz.	12 oz.	36 oz.	2 qt.	3 qt.	5 qt.	2 gal.	2.0%

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Recommendation for Effective Weed Control

Application Rate (Per Acre) & Timing

Suggested Recommendation Color Key	Generally speaking, brush control will always be better when foliar applications are made after mid-June and are made prior to September 1st. Application before mid-June can result in uneven control a year after treatment.

Species	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Ash - Expect 50% control						4-6 pts Surmount® herbicide						
Beech						2 pints Remedy® herbicide + 1 lb 2,4-D **OR** 4 pints Surmount herbicide						
Blackberry Brambles - Apply After Fruit Drop							16 fluid ounces of DuraCor® herbicide + 1 pint Remedy® **OR** 24-32 ounces of MezaVue® herbicide					
Buckbrush - Apply When Buckbrush has 6-8 inches of New Growth (Application after June 15 may be ineffective)				2-3 ounces of Chaparral™ herbicide + 1 quart 2,4-D **OR** 16-20 fluid ounces of DuraCor® herbicide + 1 quart 2,4-D								
Cottonwood						4 pints Surmount®						
Dew Berries - Apply at Late Bud Through Bloom							16 fluid ounces of DuraCor® + 1 pint Remedy®					
Dogwood						4 pints Surmount **OR** 2 pints of MezaVue + 1 pint Tordon® 22K						
Elderberry					16 fluid ounces of DuraCor® + 1 pint Remedy®							
American or Slippery Elms - Multiple Year Applications Needed							4-6 pints Surmount					
Hackberry							4 pints Surmount **OR** 2 pints of MezaVue®					
Hawthorne							4 pints Surmount **OR** 2 pints of MezaVue®					

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Recommendation for Effective Weed Control

Application Rate (Per Acre) & Timing

Suggested Recommendation Color Key	Generally speaking, brush control will always be better when foliar applications are made after mid-June and are made prior to September 1st. Application before mid-June can result in uneven control a year after treatment.

Species	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Hedge (Osage Orange) If multiple species such as hedge, locust, hackberry and multiflora rose, use 20 fluid ounces of DuraCor® herbicide + 1 pint Remedy® herbicide.							16 fluid ounces of DuraCor® + 1 pint Remedy® **Note: If multiple species such as hedge, locust, hackberry and multipflora rose, use 20 fluid ounces of DuraCor + 1 pint Remedy**					
Honeysuckle Foliar sprays are generally ineffective.	Basal bark application of 1 part Remedy® and 3 parts basal oil **Note: Foliar sprays are generally ineffective.**											
Locust Honey and Black							16-20 fluid ounces of DuraCor® + 1 pint Remedy® **OR** 1.5 to 2 pints of MezaVue® herbicide					
Maple Maple control is difficult with foliar sprays. Basal bark with Remedy® and basal oil for best control.							2-3 pints Remedy® + 1 lb 2,4-D **Note: Maple control is difficult with foliar sprays. Basal bark with Remedy and basal oil for best control.**					
Mulberry Mulberry can be controlled with a 2% Surmount® herbicide spot spray.							4 pints Surmount® **Note: Mulberry can be controlled with a 2% Surmount spot spray.** **OR** 2 pints of MezaVue®					
Multiflora Rose						16 fluid ounces of DuraCor® herbicide + 1 pint Remedy® **Note: Only apply when plants have healthy leaf surfaces any time from budding- flowering. Delay treatment 9-12 months after mowing.**						
Oaks (Post)							4 pints Remedy herbicide **Expect no more than 60% control**					
Persimmon Difficult to control, expect 75-80%. Two consecutive years of treatment may be needed.						4 pints Surmount® herbicide **Note: Difficult to control, expect 75-80%. Two consecutive years of treatment may be needed.**						
Poison Ivy						1% PastureGard® HL herbicide foliar spot spray						
Prickly Pear Optimum timing is at bolt and through flowering.	3-4 pints Surmount® herbicide **Note: Optimum timing is at bolt and through flowering.** **OR** 2 pints of MezaVue®											

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Recommendation for Effective Weed Control

Application Rate (Per Acre) & Timing

Species	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Red Cedar			Undiluted Tordon® 22K herbicide soil applied at 1 ml/foot of tree height									
Sycamore						2-3 pints Remedy herbicide + 1 lb 2,4-D						
Sumac, Smooth					4 pints Surmount® herbicide **OR** 2 pints of MezaVue®							
Sumac, Aromatic (Skunk Brush)					20 fluid ounces of DuraCor® herbicide + 1 pint Remedy herbicide							
Trumpet Creeper Foliar sprays are generally ineffective.	Basal bark application of 1 part Remedy and 3 parts basal oil **Note: Foliar sprays are generally ineffective.**											
Willow						4 pints Remedy + pint DuraCor® **Suppression Only**						
Yucca Expect 50% control, multiple seasons of application needed.	2 % Remedy in basal oil/crop oil/diesel (hand spot treat) **Note: Expect 50% control, multiple seasons of application needed**											
Prickly Pear Optimum timing is at bolt and through flowering.	3-4 pints Surmount® **Note: Optimum timing is at bolt and through flowering.**											
Additional Notes	• For pastures with a general mix of brush species under 10 feet tall, use a tank mix of 1 - 2 pints Remedy® + 20 fluid ounces of DuraCor® herbicide or a single treatment of 4 pints Surmount® herbicide • For stands that are taller than 10 feet tall, use a tank mix of 1 - 2 quarts of Remedy Ultra herbicide + 20 fluid ounces of DuraCor herbicide or a single treatment of 4-6 pints Surmount herbicide • Always use a drift control agent. • Add a non-ionic surfactant at 0.25% to 0.5% (1-2 quarts/100-gallon spray solution).					• When treating brush keep in mind that certain species such as dogwood, oaks, elms, skunk brush, persimmon and ash trees will all need some follow-up treatment in 1-2 years. • You may also use a spot spray rate of 0.5% DuraCor*, 0.5 % Remedy* Ultra and 0.25% surfactant to treat fence rows and follow up spot spraying. • For extremely overrun pastures, consult your Corteva Range & Pasture Specialist for recommendations. • Use the higher end of the rate range when treating brush 10 feet or taller. Always use a drift agent, a surfactant and a minimum of 5 gallons/acre when applying by air. Some applications may require re-treatment the following year.				

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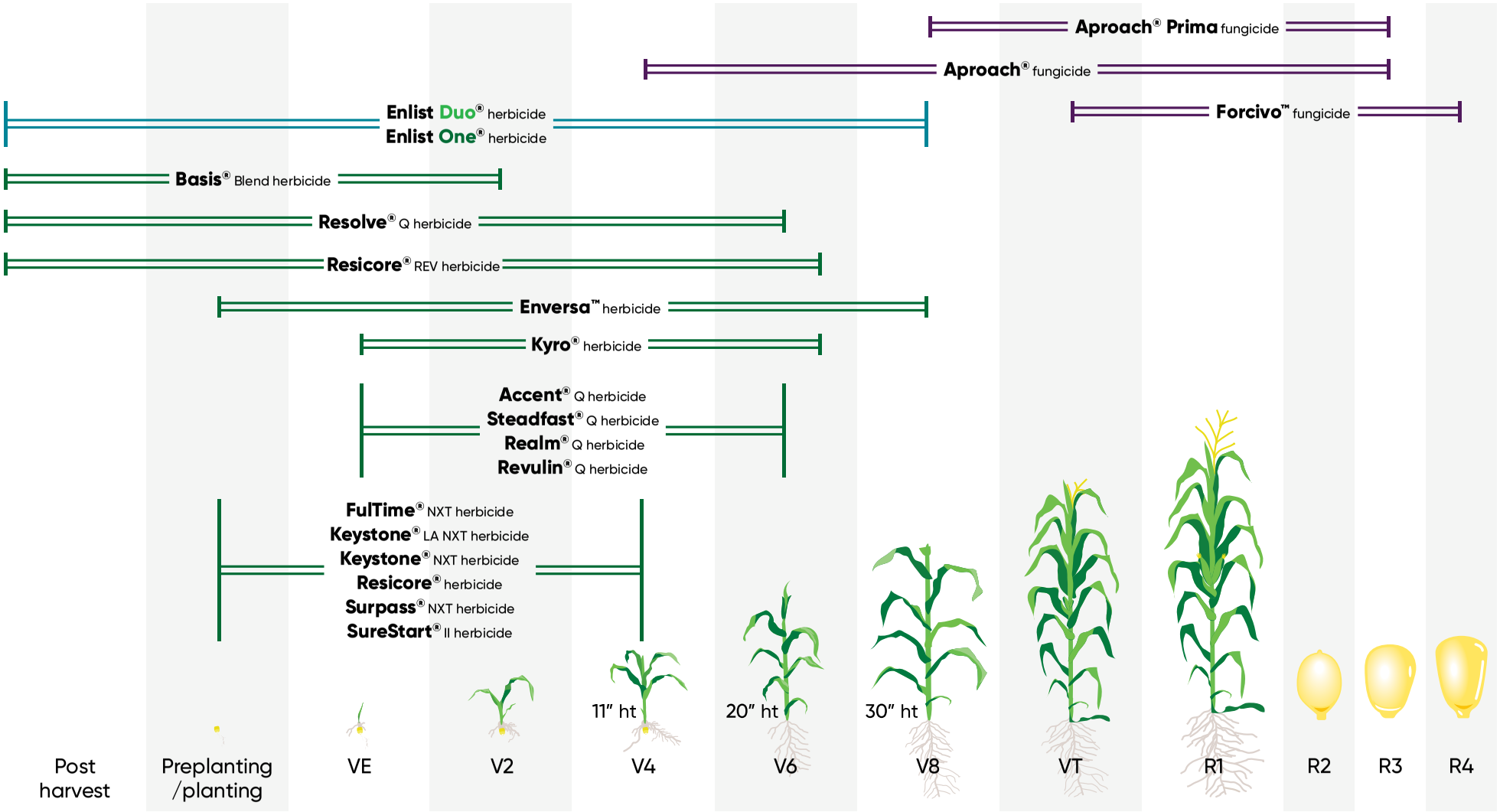
CORTEVA™ agriscience

Corn herbicide

Notes:

Application Timing

Corn



*Enlist Duo and Enlist One are only labeled for use on Enlist-traited crops.

Accent® Q

HERBICIDE

Active Ingredient(s): nicosulfuron
Site of Action: Group 2
Formulation Type: WDG
Package Size(s): 12 x 18 oz. bottle
Rainfast: 4 hours
Pre-harvest Interval: N/A

Features:

- Postemergence grass control in field corn, seed corn, sweet corn and popcorn
- Delivers selective, postemergence grass control under a variety of conditions in field corn, seed corn, sweet corn and popcorn.
- Selective postemergence contact protects corn from the toughest grasses, including foxtails, wild proso millet, woolly cupgrass and fall panicum.
- Flexibility to apply under more diverse weather conditions and across more seed corn inbreds, sweet corn hybrids and popcorn varieties with a wider range of adjuvants.

Top Weeds Controlled	
Barnyardgrass	Shattercane
Foxtail, giant and green	Timothy
Itchgrass	Wild Oats
Johnsongrass, seedling	Wild Proso Millet
Panicum, fall,	Witchgrass
Ryegrass	Woolly Cupgrass*
Sandbur, field & longspine*	

**Requires the use of COC plus ammonium nitrogen fertilizer. Cultivation or re-treatment may be required. See "FOR ADDITIONAL CONTROL OF LATER EMERGING GRASSES"*

See label for complete list

Recommendation(s):

Postemergence Application:

Accent® Q herbicide	***0.9 oz***
+ Atrazine	*0.5 lbs*
+ AMS	*2 lbs ac*
+ COC	*1 gal/100 gal*

Consider:

+ Mesotrione

- Accent Q may be broadcast on corn up to V6-leaf collars.
- Seed corn or popcorn apply broadcast up to V5-leaf collars.
- Not all seed corn inbreds, popcorn or sweet corn hybrids have been tested for crop tolerance
- Do not use MSO adjuvants when tank mixing Accent Q with Mesotrione. Use a petroleum-based crop oil concentration.
- If another herbicide is tank mixed with Accent Q, select adjuvants authorized for use with both products.
- Consult atrazine label for crop height restriction.
- Consult product labels on maximum ai. application per season when planning your herbicide program

Basis® Blend

HERBICIDE

Active Ingredient(s): rimsulfuron + thifensulfuron methyl
Site of Action: Group 2
Formulation Type: SG
Package Size(s): 8 x 50 oz. bottle
Rainfast: N/A
Pre-harvest Interval: N/A

Features:

- Features outstanding post-harvest burndown plus residual weed control.
- Works to control glyphosate-tolerant and glyphosate-resistant weeds plus other key weeds, including dandelion, poison hemlock, annual bluegrass, henbit and other winter annuals.
- Advanced formulation dissolves more completely so it mixes easier, minimizes residue left in the tank and requires less rinsing.
- Basis Blend is more readily absorbed by weeds, resulting in more consistent control over a wide variety of environmental conditions, including cool fall or early spring conditions.
- Can be applied to both conventional and traited corn.

Top Weeds Controlled	
Annual bluegrass	Marestail/Horseweed
Chickweed	Pigweed species
Dandelion	Poison Hemlock
Deadnettle, Purple	Purslane, common
Field Pennycress	Wild Mustard
Henbit	

See label for full details

Recommendation(s):

Fall Application:

Fall applications of Basis Blend® herbicide must be followed by spring planted corn, no planting soybeans the spring following.

Basis® Blend herbicide	***1.25-1.5 oz***
+ 2,4-D	*1 pt*
+ COC	*1 gal/100 gal*

Consider:

Add glyphosate for winter annual grasses greater than 1”

+ Elevore® herbicide	*1 oz*

Spring Burndown Application:

Basis Blend	***1.25-1.5 oz***
+ 2,4-D	*1 pt*
+ COC	*1 gal/100 gal*

Consider:

Add glyphosate for winter annual grasses greater than 1”

+ Elevore	*1 oz*

- Follow appropriate 2,4-D and Elevore preplant interval for corn
- Consult product labels on maximum ai. application per season when planning your herbicide program

Elevore®

Arylex™ active

HERBICIDE

Active Ingredient(s): halauxifen-methyl
Site of Action: Group 4
Formulation Type: SC
Package Size(s): 4 x 1 qt. bottle
Rainfast: 1 hour
Pre-harvest Interval: N/A

Features:

- Elevore herbicide is a new burndown designed to elevate growers' weed control programs.
- Features Arylex® active, a new Group 4 growth regulator herbicide.
- Labeled for burndown applications in multiple crops, including soybeans and corn.
- When added to a burndown program, Elevore will offer thorough control of labeled broadleaf weeds, including glyphosate- and ALS-resistant species such as henbit, chickweed and marestail up to 8-inches tall.
- Effective weed control in cooler temperatures.

Top Weeds Controlled	
Catchweed bedstraw	Marestail/ Horseweed
Chickweed	Pigweed, redroot
Flixweed	Purple Deadnettle
Hempnettle, common	Ragweed, common
Henbit	Wild Garlic
Lambsquarters, common	

Recommendation(s):

Fall Application:

Elevore® herbicide	***1 oz***
+ MSO or COC	*1 gal/100 gal*
+ Glyphosate	*24-32 oz*
+ 2,4-D	*1 pt*

Consider:

+ **Basis®** Blend	*1.25 oz*

Spring Burndown Application:

Elevore	***1 oz***
+ MSO or COC	*1 gal/100 gal*
+ Glyphosate	*24-32 oz*
+ 2,4-D	*1 pt*

Consider:

+ **Basis** Blend herbicide	*1.25 oz*

- Observe all plant back restrictions listed in the Elevore label, 14 days to corn
- Do not apply more than 2 oz of Elevore per acre per year
- Do not apply to frozen ground
- Consult product labels on maximum ai. application per season when planning your herbicide program
- For best results, use COC or MSO and 15-20 gal/A spray volume
- Follow appropriate 2,4-D preplant interval for corn

Crop Rotation:	
Alfalfa	9 months
Corn (planted at least 1.5 in. deep and the seed furrow is completely covered with no seed exposed)	3 days
Corn (if conditions above are not met)	14 days
Soybean	14 days
Sorghum	14 days
Wheat	14 days

If 2,4-D is added, plant back restriction will be longer than 3 days. Consult 2,4-D label for appropriate plant back restriction.

Notes:

Enlist Duo®

COLEX•D® technology

HERBICIDE

Active ingredient(s): 2,4-D choline salt + glyphosate dimethlyammonium
Site of action: Group 4 + Group 9
Formulation type: WSL
Package size(s): 2x2.5s, 250 gal, bulk
Rainfast: 4 hours
Pre-harvest interval: Refer to federal label for specific crop PHI

Features:

- Convenient proprietary blend of 2,4-D choline and glyphosate.
- Multiple modes of action in a convenient blend.
- Fit for acres where grass control is needed; works well for burndown.
- Improved tank stability for a blend that stays mixed.
- **Follow tank mix sequence in Enlist section.**

For use with Enlist traited crops

Enlist® CORN

Top weeds controlled

Broad spectrum grass and broadleaf control

See label for complete list of weeds controlled.

Recommendation(s) For **Enlist®** Traited Corn Only:

Burndown Application:

Enlist Duo® herbicide	***4.75 pt***
+ AMS	*8.5-17 lbs/100 gal*

Split Application:

Fultime® NXT herbicide	***3 qt***
Followed by Enlist Duo	*4.75 pt*
+ Realm® Q herbicide *(POST only)*	*4 oz*
+ AMS	*8.5 lbs/100 gal*

Postemergence Application:

Enlist Duo	***4.75 pt***
+ Realm® Q herbicide *(POST only)*	*4 oz*
+ AMS	*8.5-17 lbs/100 gal*

- Use a full herbicide program approach with multiple sites of action.
- Always use Enlist Duo with a qualified tank mix partner or a sequential herbicide pass - never use Enlist Duo as the only POST site of action on Enlist® Corn acres.
- Find a full list of qualified tank mix partners at EnlistTankMix.com.
- Consult product labels on maximum ai. application per season when planning your herbicide program.
- Do not apply Fultime NXT on corn greater than 11 in. in height.

Enlist One®

COLEX-D® technology

HERBICIDE

Active ingredient(s): 2,4-D choline salt
Site of action: Group 4
Formulation type: WSL
Package size(s): 2x2.5s, 250 gal, bulk
Rainfast: 4 hours
Pre-harvest interval: Refer to federal label for specific crop PHI

Features:

- Straight-good 2,4-D choline with additional tank-mix flexibility.
- 2,4-D choline as the basis for exceptional weed control.
- Compatibility to tank-mix with qualified glufosinate, glyphosate, residual herbicides, insecticides and more.
- Customize the ratio of herbicides to match each farm's needs.
- **Follow tank mix sequence in Enlist section.**

For use with Enlist traited crops

Enlist® CORN

Top weeds controlled

Broad spectrum broadleaf control

See label for complete list of weeds controlled.

Multiple glufosinate products are qualified tank mix partners.

For more information, visit **EnlistTankMix.com**

Recommendation(s) For **Enlist®** Traited Corn Only:

Burndown Application:

Enlist One® herbicide	***2 pts***
+ Qualified loaded glyphosate	*24-32 oz*
+ AMS	*8.5 - 17 lbs/100 gal*

Consider Adding:

+ Fultime® NXT herbicide	*3 qt*

(Consult label for early preplant application timing instructions)

Split Application:

Fultime NXT	***2-2.9 qt***
Followed by Enlist One	*2 pt*
+ Glyphosate	*24-32 oz*
+ **Kyro®** herbicide *(POST only)*	*45 oz*
or **Resicore®** REV herbicide	*1.4 qt*
+ AMS	*8.5 - 17 lbs/100 gal*

Postemergence Application:

Enlist One	***2 pt***
+ Glyphosate	*24-32 oz*
+ AMS	*8.5 - 17 lbs/100 gal*

Consider Adding:

+ **Kyro®** herbicide *(POST only)*	*45 oz*
or **Resicore®** REV herbicide	*1.4 - 1.5 qt*

- Use a full herbicide program approach with multiple sites of action.
- Always use Enlist One with a qualified tank mix partner or a sequential herbicide pass - never use Enlist One as the only POST site of action on Enlist® Corn acres.
- Find a full list of qualified tank mix partners at EnlistTankMix.com.
- Consult product labels on maximum ai. application per season when planning your herbicide program
- Consult atrazine label for plant height restriction.
- Do not apply Fultime NXT on corn greater than 11 in. in height.

FulTime® NXT

HERBICIDE

Active Ingredient(s): acetochlor + atrazine
Site of Action: Group 15 + Group 5
Formulation Type: CS
Package Size(s): bulk
Rainfast: N/A
Pre-harvest Interval: 60 days, refer to federal label for specific crop PHI

Features:

- Excellent control of annual grasses; broad-spectrum control of broadleaf weeds.
- Can be applied from early preplant up to 11-inch corn.
- Time release encapsulated formulation designed for high-residue corn production systems.
- Can be used alone or in combination with many pre- and postemergence corn herbicides.

Top Weeds Controlled	
Barnyardgrass	Panicum, Fall
Cocklebur[4]	Pigweed species
Crabgrass species	Ragweed, Common
Cupgrass, Wooly[1]	Ragweed, Giant*
Foxtail species	Sandbur, Field*[2]
Johnsongrass, Seedling*[2]	Shattercane*[2]
Kochia[4]	Sicklepod*
Lambsquarters, common	Sida, Prickly
Morningglory, annual[4]	Smartweed species
Nightshade species	Velvetleaf[4]
Nutsedge, Yellow[3]	Waterhemp, Tall

** Partial control*
See label for complete list of weeds controlled.

Recommendation(s):

Preemergence Application:

FulTime® NXT herbicide	***3-3.5 qt***
Consider:	
+ Glyphosate	*24-32 oz*
+ AMS	*8.5-17 lbs/100 gal*

Split Application:

Option 1

FulTime NXT	***1.75-2 qt***
Followed by	
FulTime NXT	***1.75-2 qt***
Consider:	
+ Glyphosate	*24-32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ **Realm®** Q herbicide *(Post only)*	*4 oz*

Option 2

FulTime NXT	***2-2.9 qt***
Followed by	
Resicore® herbicide	***1.25-1.4 qt***
or **Resicore®** REV herbicide	***1.4 qt***
Consider:	
+ Atrazine	*0.5-1 lbs*
+ Glyphosate	*24-32 oz*
+ AMS	*8.5 lbs/100 gal*

Option 3

FulTime® NXT herbicide	***2-2.9 qt***
Followed by	
Kyro™ herbicide *(Post Only)*	***45 oz***
Consider:	
+ Atrazine	*0.5-1 lbs*
+ Glyphosate	*24-32 oz*
+ AMS	*8.5 lbs/100 gal*

- For Kyro applications, utilize 1 gal/100 gal of COC if atrazine is NOT in the tank mix with Kyro. If atrazine is in the tank mix with Kyro, utilize 1 qt/100 gal of NIS with Kyro.

Postemergence Application:

FulTime NXT	***2-2.5 qt***
+ Glyphosate	*24-32 oz*
+ AMS	*8.5-17 lbs/100 gal*
Consider:	
+ **Realm®** Q herbicide *(Post Only)*	*4 oz*

- Consult product labels on maximum ai. application per season when planning your herbicide program
- If adding Realm Q, NIS may be used. There is still a risk of temporary crop injury in the form of leaf burn with these mixtures.
- Consult atrazine label for plant height restriction.

[1] Apply 4.4 quarts of FulTime NXT per acre to control this weed in corn; apply 3.7 quarts per acre to control this weed in grain sorghum. Control of this weed can be erratic, especially under dry conditions. Control escaped weeds with cultivation or application of an appropriate registered postemergence herbicide

[2] When applied immediately after planting or within 5 days of last tillage, FulTime NXT broadcast applied at a rate of 3.6 to 4.4 quarts per acre in corn will reduce competition from these weeds postemergence herbicide

[3] Preplant incorporate for control.

[4] Use the higher rate in the application rate range within each application rate table. Control of these weeds can be erratic, especially under dry weather conditions. Control escaped weeds with cultivation or application of an appropriate registered postemergence herbicide

[4] Triazine-resistant biotypes may require a postemergence sequential application of a non-triazine herbicide for control.

Keystone® NXT

HERBICIDE

Active Ingredient(s): acetochlor + atrazine
Site of Action: Group 15 + Group 5
Formulation Type: SE
Package Size(s): 2 x 2.5 gal jug, 120 gal, bulk
Rainfast: N/A
Pre-harvest Interval: 60 days, refer to federal label for specific crop PHI

Features:

- A trusted partner in weed control that provides dependable, early season control of grasses and broadleaf weeds.
- Can be applied from early preplant up to 11-inch corn.
- Two modes of action to control herbicide-resistant weeds – supporting glyphosate stewardship programs.
- Requires only ¼ inch of rain for activation.

Top Weeds Controlled

Barnyardgrass	Panicum, Fall
Cocklebur[2]	Pigweed species
Crabgrass species	Ragweed, Common
Cupgrass, Wooly*	Ragweed, Giant*
Foxtail species	Sandbur, Field*
Johnsongrass, Seedling*	Shattercane*
Kochia	Sicklepod*
Lambsquarters, common	Sida, Prickly
Morningglory, species[2]	Smartweed species
Nightshade species	Velvetleaf[2]
Nutsedge, Yellow[1,2]	Waterhemp, Tall

* Partial control

See label for full details

[1] Preplant incorporate for improved control.
[2] Use the higher rate in the specified application rate range. Control of these weeds can be erratic, especially under dry conditions. Additional atrazine and/or sequential herbicide applications may be needed for complete control.
[3] Best control is achieved when Keystone NXT is applied within 5 days of planting and rainfall occurs shortly after application or mechanical incorporation is used to activate the herbicide. If rainfall does not occur within 7 days after application, shallow cultivation will enhance activity. Excessive rainfall after application may reduce control. Under adverse weather conditions and/or heavy infestations, a cultivation or follow-up herbicide application may be needed.

Recommendation(s):

Preemergence Application:

Keystone® NXT herbicide	***2.4-3 qt***

Consider:

+ Glyphosate	*24-32 oz*	+ AMS	*8.5-17 lbs/100 gal*

Split Application:

Option 1

Keystone NXT	***1.5 qt***
Followed by **Keystone** NXT	*1.5 qt*

Consider:

+ Glyphosate	*24-32 oz*	+ **Realm®** Q herbicide	*4 oz*
+ AMS	*8.5-17 lbs/100 gal*	*(Post Only)*	

Option 2

Keystone NXT	***1.75-2.3 qt***
Followed by **Resicore®** herbicide	*1.25-1.5 qt*
or **Resicore®** REV herbicide	*1.4-1.5 qt*

Consider:

+ Atrazine	*0.5 lbs*	+ AMS	*8.5 lbs/100 gal*
+ Glyphosate	*24-32 oz*		

Option 3

Keystone NXT	***1.75-2 qt***
Followed by **Kyro™** herbicide *(Post Only)*	*45 oz*

Consider:

+ Atrazine	*0.5-0.75 lbs*	+ AMS	*8.5 lbs/100 gal*
+ Glyphosate	*24-32 oz*		

- Do not recommend COC in post applications with Keystone NXT.
- Consult product labels on maximum ai. application per season when planning your herbicide program
- If adding Realm Q, NIS may be used. There is still a risk of temporary crop injury in the form of leaf burn with these mixtures.
- Consult atrazine label for plant height restriction.

Notes:

Kyro®

HERBICIDE

Active Ingredient(s): acetochlor + topramezone + clopyralid

Site of Action: Group 15 + Group 27 + Group 4

Formulation Type: ZC

Package Size(s): 2x2.5 gal jug, 250 gal, bulk

Rainfast: N/A

PHI: Ears and forage: 45 days
Stover: 60 days

Features:

- 3 modes of action for control of the toughest weeds
- Versatility from emergence up to 24-inch tall corn
- Industry leading grass-control, offering both post-emergence & residual activity on tough grasses
- Fit for a wide variety of different types of corn:
  Glyphosate Tolerant, Non-GMO, Seed and Popcorn
- Tank-mix flexibility with glyphosate, atrazine and other corn herbicides for greater weed control

Top Weeds Controlled	
Amaranth species	Kochia*
Barnyardgrass	Morningglory, species
Crabgrass species	Nightshade species
Clover species	Pigweed species
Cupgrass species*	Ragweed*
Foxtail species	Smartweed species
Goosegrass	Velvetleaf
Henbit	Waterhemp species

** Partial control*

See label for complete list of weeds controlled.

Recommendation(s):

Kyro® herbicide	***45-60 oz***
+ Atrazine^	*0.5-1 lbs*
+ Glyphosate	*24-32 oz*
+ **Enlist One®** herbicide ***(Enlist Tolerant Corn Only)***^^	***32 oz***
+ AMS	*8.5-17 lbs/100 gal*
+ NIS or	*1 qt/100 gal*
COC *(if no atrazine added)*	*1 gal/100 gal*

Program #1

Preemergence Application:

SureStart® II herbicide	*1.75 pts*
+ Atrazine	*1 lb*

Postemergence Application

Kyro	***45 oz***
+ Atrazine^	*0.5-1 lbs*
+ Glyphosate	*24-32 oz*
+ **Enlist One** ***(Enlist Tolerant Corn Only)***^^	***32 oz***
+ AMS	*8.5-17 lbs/100 gal*
+ NIS or	*1 qt/100 gal*
COC *(if no atrazine added)*	*1 gal/100 gal*

^Use a max rate of 0.5 lbs. of atrazine if mixing with Enlist One on Enlist Tolerant Corn.

^^If tank mixing with Enlist One (Enlist tolerant corn only), consult with your local Corteva Territory Manager for an adjuvant/surfactant recommendation.

Program #2

Preemergence Application:

FulTime® NXT herbicide	*2-2.9 qts*
or Keystone® NXT herbicide	*1.75-2 qts*

Postemergence Application

Kyro™ herbicide	***45 oz***
+ Atrazine^	*0.5-0.75 lbs*
+ Glyphosate	*24-32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ NIS or	*1 qt/100 gal*
COC *(if no atrazine added)*	*1 gal/100 gal*

Consider:

+ Enlist One ***(Enlist Tolerant Corn Only)***^^	***32 oz***

^Use a max rate of 0.5 lbs. of atrazine if mixing with Enlist One on Enlist Tolerant Corn.

^^If tank mixing with Enlist One(Enlist tolerant corn only), consult with your local Corteva Territory Manager for an adjuvant/surfactant recommendation.

- Consult atrazine label for plant height restriction
- Substitute NIS with 1 gal/100 gal of COC if atrazine is not in the tank
- Consult product labels on maximum ai. application per season when planning your herbicide program
- If utilizing Enlist One on Enlist Tolerant corn, find a full list of qualified tank mix partners at EnlistTankMix.com

Rate Structure

Kyro: 2.78 lbs/gal acetochlor + 0.046 lbs/gal topramezone + 0.247 lbs/gal clopyralid

	Up to 4" weeds *(35-45 fl oz)*		**Up to 6" weeds** *(45-60 fl oz)*
Use rates	"Low" smaller weeds lighter pressure	"Standard" glyphosate + atrazine 4-6" waterhemp	"Max" conventional acre seed corn
Equivalent component rates	**35 fl oz**	**45 fl oz**	**60 fl oz**
Acetochlor	0.87 pt	1.12 pt	1.48 pt
Topramezone	0.59 fl oz	0.76 fl oz	1.01 fl oz
Clopyralid	2.91 fl oz	3.74 fl oz	4.98 fl oz

Use Rate: 35-60 fl oz/A

- For use on field corn, field seed corn, field silage corn, & popcorn

Season max rates:

- **Acetochlor:** 3.4 pt/A (3 lb ai)
- **Topramezone:** 2 fl oz/A (0.044 lb)
- **Clopyralid:** 10.67 fl oz/A (0.25 lb ai)

Realm® Q

HERBICIDE

Active Ingredient(s): rimsulfuron + mesotrione
Site of Action: Group 2 + Group 27
Formulation Type: WDG
Package Size(s): 8 x 80 oz. bottle
Rainfast: 4 hours
Pre-harvest Interval: N/A

Features:

- Realm® Q provides excellent postemergent control of weeds.
- Its convenient dry formulation boosts productivity with its low use rate.
- Contains a built in safener to apply under more diverse weather conditions.
- Provides contact and residual control of tough weeds.

Top Weeds Controlled	
Cocklebur, common	Pigweed species
Lambsquarters, common	Ragweeds, common and giant
Marestail/Horseweed*	Smartweed species
Morningglory species	Velvetleaf
Palmer Amaranth*	Waterhemp*

See label for complete list of weeds controlled.

Recommendation(s):

Postemergence Application:

Realm® Q herbicide	***4 oz***
+ Glyphosate	*24-32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ NIS	*1 qt/100 gal*

Consider:

+ Atrazine^	*0.25-1 lb*
or	
+ **FulTime®** NXT herbicide	*2-2.5 qt*
or **Keystone®** NXT herbicide	*1.7 qt*

- Realm Q application broadcast on field corn only up to V6-leaf collars
- Do not apply to sweet corn
- Consult atrazine label for crop height restriction
- Do not apply FulTime NXT or Keystone NXT on corn greater than 11 inches
- Consult product labels on maximum ai. application per season when planning your herbicide program
- Use NIS to further reduce the risk of crop injury. Leave out the COC and replace it with an NIS if Keystone NXT or Fultime NXT are used. There is still a risk of temporary crop injury in the form of leaf burn with these mixtures

Realm® Q 4 oz/A + glyphosate 32 oz/A. Applied May 31, 2011. Photo taken June 13, 2011.

Notes:

Resicore®

HERBICIDE

Active Ingredient(s): acetochlor + mesotrione + clopyralid

Site of Action: Group 15 + Group 27 + Group 4

Formulation Type: SE

Package Size(s): 2 x 2.5 gal jug, 250 gal, bulk

Rainfast: N/A

Pre-harvest Interval: 45 days

Features:

- Provides powerful residual control that lasts deep into the growing season
- Is versatile enough to fit a variety of agronomic programs including pre-, post- or split applications
- Has a novel formulation of three leading active ingredients together for improved mixing and handling
- Does not contain glyphosate or atrazine so farmers have the flexibility and convenience they need to customize their weed control program

Top Weeds Controlled	
Barnyardgrass	Nutsedge, Yellow
Cocklebur	Panicum, Fall
Crabgrass species	Pigweed species
Cupgrass, Wooly*	Ragweeds, Common & Giant
Foxtail species	Sandbur, Field*
Johnsongrass, Seedling*	Shattercane*
Kochia	Sicklepod
Lambsquarters, common	Sida, Prickly*
Morningglory, species	Smartweed species
Nightshade species	Velvetleaf
	Waterhemp, Tall

** Partial control*

See label for complete list of weeds controlled.

Recommendation(s):

Preemergence Application:

Resicore® herbicide — ***2.5-3 qt***

Consider:

+ Atrazine — *1-2 lbs.*
+ Glyphosate — *24-32 oz*

Split Application:

Resicore — ***1.25-1.5 qt***

Consider:

+ Atrazine — *1 lbs.*
+ Glyphosate — *24-32 oz*
+ AMS — *8.5-17 lbs/100 gal*

Followed by

Resicore — ***1.25-1.5 qt***

Consider:

+ Glyphosate — *24-32 oz*
+ AMS — *8.5-17 lbs/100 gal*

Optional:

+ Atrazine — *1 lbs*

Applied at plant 4/24/16. Resicore at 1.5 qts./A - photo taken 6/1/16

Postemergence Application:

Resicore® herbicide	***1.25-1.5 qt***
+ Glyphosate	*24-32 oz*
+ AMS	*8.5-17 lbs/100 gal*

Consider:

+ Atrazine	*1 lbs*

- Do not apply Resicore herbicide to yellow popcorn after the crop has emerged or severe crop injury may occur.
- Use of adjuvants with Resicore applied prior to weed emergence is not necessary or recommended.
- Apply spring up to 30 days before planting, PPI, pre-emergence, spike stage corn, or post up 11" tall corn. For maximum residual, apply as close to planting as possible.
- Consult product labels on maximum ai. application per season when planning your herbicide program

Crop Rotation Needed	
Corn	Anytime
Wheat	4 months
Alfalfa*, barley, dried edible beans, millet, oats, rice, rye, sorghum*, soybean*, sunflower*, sweet corn	10.5 months
Sugarbeets	18 months

** Refer to crop label*

Product comparison:

PRE: Acuron 3 qt. + glyphosate 20 oz.
Sprayed on 4/14/16 - photo taken 6/9/16

PRE: Resicore 2.5 qt. + glyphosate 20 oz.
Sprayed on 4/14/16 - photo taken 6/9/16

POST Resicore 1.25 qts + atrazine + glyphosate
Applied: 5/23/17 Picture 6/7/17

Resicore® REV

HERBICIDE

Active Ingredient(s): acetochlor + mesotrione + clopyralid

Site of Action: Group 15 + Group 27 + Group 4

Formulation Type: ZC

Package Size(s): 2x2.5s, 250 gal, bulk

Rainfast: N/A

PHI: Ears and Forage: 45 days
Stover: 60 days

Features:

- 3 modes of action for control of the toughest weeds
- Versatility as preplant, pre- and post-emergence herbicide
- Encapsulated acetochlor for increased crop safety
- Improved handling and tank-mixing compatibility with key nutrients, such as UAN and Ammonium Thiosulfate
- Tank-mix flexibility with glyphosate, atrazine and other corn herbicides for greater weed control

Top Weeds Controlled	
Barnyardgrass	Panicum, sp.
Cocklebur, common	Pigweed, sp.
Crabgrass, sp.	Ragweeds, common, Giant
Cupgrass, wooly*	Sandbur, field*
Foxtail, sp.	Shattercane*
Johnsongrass, Seedling*	Sicklepod
Kochia	Sida, prickly*
Lambsquarters, common	Smartweed, sp.
Morningglory, sp.	Velvetleaf
Nightshade, sp.	Waterhemp, sp.
Nutsedge, yellow	

** Partial control*

See label for complete list of weeds controlled.

Recommendation(s):

Preemergence Application:

Resicore® REV herbicide — ***2.5 - 3 qt***

Consider:

+ Atrazine — *1 - 2 lbs*
+ Glyphosate — *24 - 32 oz*

Split Application:

Resicore REV — ***1.4 - 1.5 qt***

Consider:

+ Glyphosate — *24 - 32 oz*
+ Atrazine — *1 lb*

Followed by

Resicore REV — ***1.4 - 1.5 qt***

Consider:

+ Glyphosate — *24 - 32 oz*
+ Atrazine — *0.5-1 lb*

Postemergence Application:

Resicore REV — ***1.4 - 1.5 qt***

Consider:

+ Atrazine^ — *0.5-1 lb*
+ Glyphosate — *24 - 32 oz*
+ **Enlist One** *(Enlist Tolerant Corn Only)* — ***32 oz***

^*Use a max rate of 0.5 lbs. of atrazine if mixing with Enlist One on Enlist Tolerant Corn.*

- For use on field corn, field seed corn and field silage corn.
- DO NOT apply Resicore REV more than 28 days prior to planting
- An additional 0.25 qt/A may be used in areas of heavy weed infestation
- DO NOT exceed 3.25 qt/A of Resicore REV per season
- Resicore REV should not be used on soils with greater than 10 percent organic matter
- Consult product labels on maximum ai. application per season when planning your herbicide program
- Consult atrazine label for plant height restriction.
- If utilizing Enlist One on Enlist Tolerant corn, find a full list of qualified tank mix partners at EnlistTankMix.com

Crop Rotation*	Timing
Corn	Anytime[1]
Wheat	4 months
Alfalfa[2], barley, millet (pearl and proso), oats, rice, rye, sorghum[3], soybean[4], sunflower[4]	10.5 months[5]
Cotton	12 months
All other rotational crops	18 months

* Minimum number of months that must pass before planting other crops after application of Resicore® REV herbicide.

1 Do not make a second application of Resicore REV if the original corn crop is lost.

2 Idaho, Nevada, Oregon, Utah, and Washington: 12 months, areas receiving greater than 18 inches of annual rainfall, excluding irrigation; 18 months, areas receiving less than 18 inches of annual rainfall, excluding irrigation. All other states: 10.5 months.

3 Idaho, Nevada, Oregon, Utah, and Washington: 12 months. All other states: 10.5 months.

4 Florida: 18 months. Idaho, Nevada, Oregon, Utah, and Washington: 12 months, areas receiving greater than 18 inches of annual rainfall, excluding irrigation; 18 months, areas receiving less than 18 inches of annual rainfall, excluding irrigation.
All other states: 10.5 months for soils greater than 2% organic matter AND rainfall more than 15 inches during 12 months following applications; 18 months for soils less than 2% organic matter and rainfall less than 15 inches during 12 months following applications.

5 In the High Plains and Intermountain areas of the West, where rainfall is sparse and erratic or where irrigation is required, use Resicore REV only when corn or sorghum is to follow field corn, or a crop of untreated corn or sorghum is to precede other rotational crops.

Revulin® Q

HERBICIDE

Active Ingredient(s): nicosulfuron + mesotrione
Site of Action: Group 2 + Group 27
Formulation Type: DF
Package Size(s): 8 x 85 oz. bottle
Rainfast: 4 hours
Pre-harvest Interval: Refer to federal label for specific crop PHI

Features:

- Early postemergence applications control broadleaf and grass weeds in corn grown for seed, sweet corn, yellow popcorn, and field corn grown for silage or grain.
- Combines two proven active ingredients in a dry flowable formulation for dependable postemergence weed control.

Top Weeds Controlled

Barnyardgrass	Sandbur, field and longspine*
Foxtail, giant and green	Shattercane
Itchgrass	Timothy
Johnsongrass, seedling	Velvetleaf
Morningglories, annual	Waterhemp*
Panicum, fall	Wild Oats
Ragweeds, common and giant	Wild Proso Millet
Ryegrass*	Witchgrass
	Woolly Cupgrass

See label for complete list of weeds controlled.

Recommendation(s):

Postemergence Application:

Revulin® Q herbicide	***3.4-4 oz***
+ AMS	*8.5-17 lbs/100 gal*
+ COC or NIS	*1 gal/100 gal* *1 qt/100 gal*

Consider:

+ Atrazine	*0.25-1 lb*
or	
+ **FulTime®** NXT herbicide	*2-2.5 qt*
or **Keystone®** NXT herbicide	*1.7 qt*

- Revulin Q application broadcast on corn up to V6-leaf collars
- Seed Corn or popcorn apply broadcast up to V5-leaf collars
- Consult atrazine label for crop height restriction
- Do not apply FulTime NXT or Keystone NXT on corn greater than 11 inches
- Consult product labels on maximum ai. application per season when planning your herbicide program
- Use NIS to further reduce the risk of crop injury. Leave out the COC and replace it with an NIS if Keystone NXT or Fultime NXT are used. There is still a risk of temporary crop injury in the form of leaf burn with these mixtures

Notes:

SureStart® II

HERBICIDE

Active Ingredient(s): acetochlor + flumesulam + clopyralid

Site of Action: Group 15 + Group 2 + Group 4

Formulation Type: SE

Package Size(s): 2 x 2.5 gal jug, 250 gal, bulk

Rainfast: N/A

Pre-harvest Interval: 85 days

Features:

- Effectively manages weed resistance through three non-glyphosate modes of action
- Helps you cover more ground with a flexible application window from preplant up to 11-inch corn
- Flexible product, either as a one or two pass program
- Ideal tank-mix partner, easily mixing with other commonly used fertilizers, spray adjuvants and herbicides

Top Weeds Controlled	
Barnyardgrass	Panicum, Fall
Cocklebur, common	Pigweed species
Crabgrass species	Ragweeds, common & giant
Cupgrass, Wooly	Sandbur, Field
Foxtail species	Shattercane
Johnsongrass, Seedling	Sicklepod
Kochia	Sida, Prickly
Lambsquarters, common	Smartweed Pennsylvania
Morningglory, species	Velvetleaf
Nightshade species	Waterhemp species
Nutsedge, Yellow	

See label for complete list of weeds controlled.

Recommendation(s):

Fall Application:

SureStart® II herbicide	***2 pt***
+ Glyphosate	*24-32 oz*
+ 2,4-D	*1 pt*
+ COC	*1 gal/100 gal*
+ AMS	*8.5-17 lbs/100 gal*

Preemergence Application:

SureStart II	***2-3 pt***
Consider:	
+ Atrazine	*1-2 lbs*
+ Glyphosate	*24-32 oz*
+ AMS	*8.5-17 lbs/100 gal*

Atrazine is a Restricted Use Pesticide.

Split Application:

Option 1

SureStart® II herbicide	***1.5 pt***
Consider:	
+ Atrazine	*1-2 lbs*
Followed by	
SureStart II	***1.5 pt***

Option 2

SureStart II	***1.75-2 pt***
+ Atrazine	*1 lb*
+ Glyphosate	*24-32 oz*
+ AMS	*8.5-17 lbs/100 gal*
Followed by	
Resicore® herbicide	***1.25-1.5 qt***
or **Resicore®** REV herbicide	***1.4-1.5 qt***
+ Atrazine	*0.5-1 lb*
+ Glyphosate	*24-32 oz*
+ AMS	*8.5-17 lbs/100 gal*

Postemergence Application:

SureStart II	***2-3 pt***
+ Glyphosate	*24-32 oz*
+ AMS	*8.5-17 lbs/100 gal*
Consider:	
+ Atrazine	*0.25-1 lbs*

- Use of adjuvants with SureStart II applied prior to weed emergence is not necessary or recommended.
- Apply spring up to 30 days before planting, PPI, pre-emergence, spike stage corn, or post up 11" tall corn. For maximum residual, apply as close to planting as possible.
- Consult product labels on maximum ai. application per season when planning your herbicide program
- Consult atrazine label for plant height restrictions

Sprayed 5/15/2020
SureStart® II 3pts, atrazine 1.5lb
Picture taken 6/16/2020

Applied at plant 4/25/15
2.5 pts SureStart II + 1 qt atrazine - photo taken 6/10/15

Crop Rotation Needed	
Alfalfa	spring following*
Soybeans	spring following*
Dry beans	spring following*
Sugarbeets, canola	26 months*
Potatoes	18 months
Sorghum	12 months
Wheat	4 months
Sunflowers	18 months

** Refer to the crop label*

Steadfast® Q

HERBICIDE

Active ingredient(s): nicosulfuron + rimsulfuron + safener
Site of action: Group 2 + Group 2
Formulation type: WDG
Package size(s): 8x60 oz bottle
Rainfast: 4 hrs.
Pre-harvest interval: N/A

Features:

- Contact plus residual control of the toughest grass and broadleaf weeds, such as field sandbur, shattercane, wild proso millet, burcucumber, and dandelion
- "Q" safener is proven to provide excellent crop safety under more conditions, with more adjuvants and across more corn hybrids
- Rainfall or irrigation reactivates weed control through root uptake

Top weeds controlled	
Barnyardgrass	Field Sandbur
Cereals, Volunteer	Foxtail, Sp.
Crabgrass, Large	Johnsongrass, Seedling
Cupgrass, Woolly	Shattercane
Fall Panicum	Proso Millet, Wild

See label for complete list of weeds controlled.

Recommendation(s):

Postemergence Application:

Steadfast® Q herbicide	***1.5 oz***
+ COC or	*1 gal/100 gal*
NIS	*1 qt/100 gal*
+ AMS	*2 lbs*

Consider:

+ Atrazine	*0.5-0.75 lbs*
or Keystone® NXT herbicide	*1.7 qt*

- Apply Steadfast® Q when minimum nighttime temperatures are above 40°F and the maximum daytime temperatures are below 92°F to maximize performance and minimize the potential for crop injury
- May be broadcast to field corn up to V6.
- **Do not apply Steadfast Q to seed corn, popcorn, or sweet corn**
- Use a minimum of 15 gallons of water for best performance
- Rainfall within 5 to 7 days after application will enhance the residual activity
- Consult atrazine label for crop height restriction
- Do not apply Keystone NXT on corn greater than 11 inches
- Do not use MSO adjuvants when tank mixing Steadfast Q with mesotrione. Use a petroleum-based crop oil concentration
- Use NIS to further reduce the risk of crop injury. Leave out the COC and replace it with an NIS if Keystone NXT are used. There is still a risk of temporary crop injury in the form of leaf burn with these mixtures
- Consult product labels on maximum ai. application per season when planning your herbicide program

Crop rotation	Interval
Dry Beans	10 months
Soybeans	15 days
Winter Cereals	4 months
Spring Cereals	8 months
Alfalfa, potato, sunflower	10 months

(Rotational intervals should be extended to 18 months if drought conditions prevail after application and before the rotational crop is planted, unless sprinkler irrigation has been applied and totals greater than 15" during the growing season). Crops with soil pH restrictions need to consult label (Sugarbeets).

Notes:

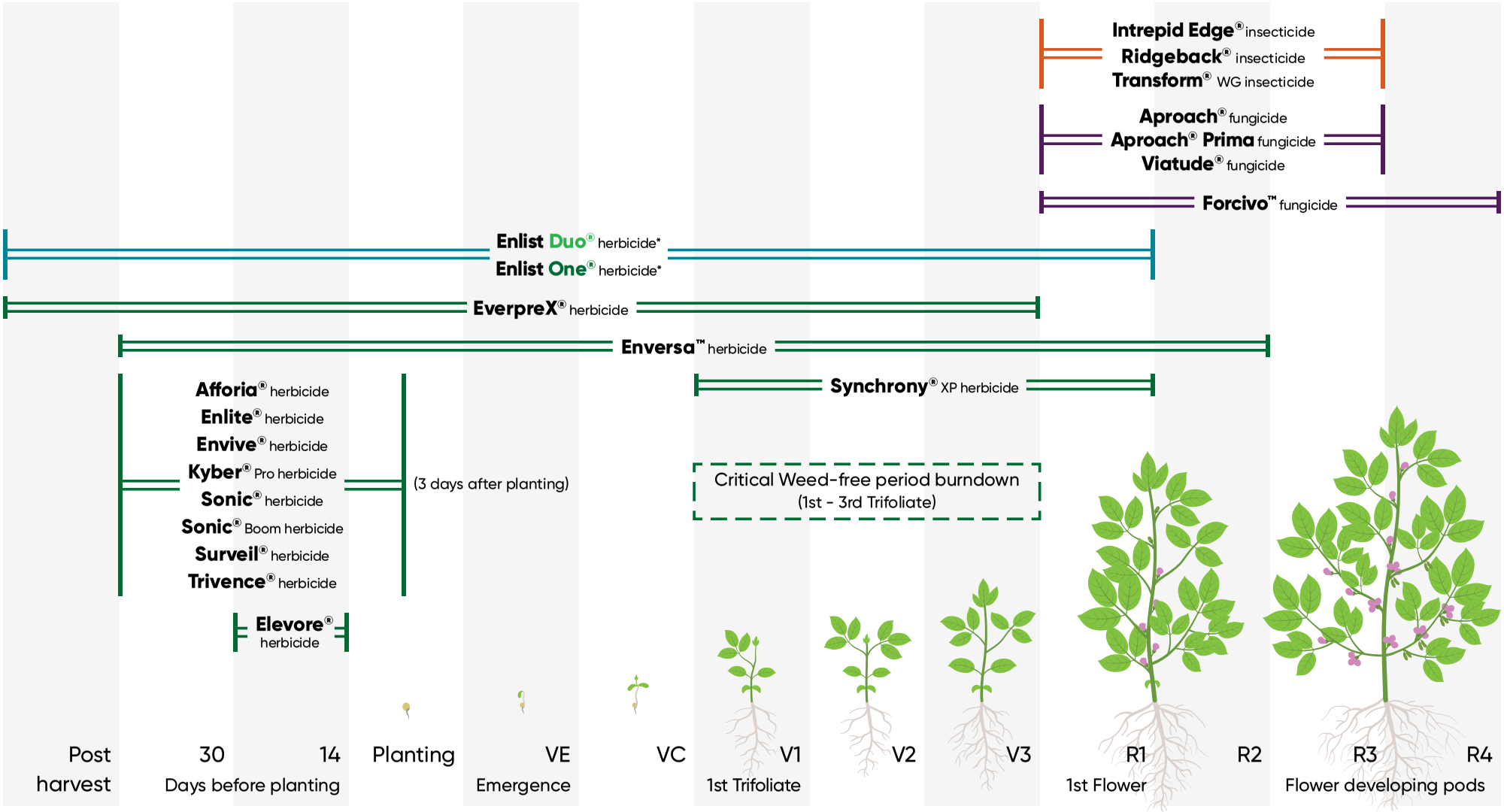
Notes:

Soybean herbicide

Notes:

Application Timing

Soybean



*Enlist Duo and Enlist One are only labeled for use on Enlist-traited crops.

CORTEVA™ agriscience

Afforia®

HERBICIDE

Active ingredient(s): thifensulfuron methyl + tribenuron methyl + flumioxazin
Site of action: Group 14 + Group 2
Formulation type: WDG
Package size(s): 8 x 75 oz. bottle
Rainfast: 1 hour
Pre-harvest interval: N/A

Features:

- Afforia® herbicide provides a powerful burndown plus residual control of resistant weeds with two modes of action and provides planting flexibility.
- It is an effective burndown of winter annuals, including marestail (horseweed), under cool, wet spring conditions.
- Provides control of tough resistant weeds: Palmer amaranth, common ragweed, lambsquarters, pigweed species, waterhemp and more.
- Improved weed resistance management over glyphosate alone, with two additional modes of action.
- Exceptional rotational and crop selection flexibility; make a burndown application after harvest through early spring.

Recommendation(s):

Fall Burndown Application:

Afforia® herbicide	***2.5 oz***
+ 2,4-D	*1 pt*
+ COC/MSO	*1 gal/100 gal*

Consider:

+ Glyphosate	*32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ **Elevore®** herbicide	*1 fl oz*

Pre-Plant Burndown Application:

Afforia	***2.5 oz***
+ 2,4-D	*1 pt*
+ Glyphosate	*32 oz*
+ COC/MSO	*1 gal/100 gal*
+ AMS	*8.5-17 lbs/100 gal*

Consider:

+ **Elevore**	*1 fl oz*
+ Metribuzin	*4-6 oz dry*

Top Weeds Controlled

Dandelion	Palmer Amaranth*
Field Pennycress	Ragweed, common
Henbit	Shepherd's purse
Lambsquarters, common	Waterhemp*
Mustard, sp	Wild Buckwheat

See label for complete list

Crop Rotation

Crop	2.5oz/A	> 2.5 oz/A to 3.75 oz/A
Soybean	Immediately[1]	7 days[1]
Soybeans with Bolt® technology	Immediately[1]	Immediately[1]
Field Corn – Minimum and No-Till	14 days[1]	14 days[1]
Field Corn – Conventional Tillage, Sorghum	30 days*	30 days*
Wheat[2]	30 days*	2 months*
Sunflower	45 days	2 months*
Barley, Dry and Snap Beans, Peas, Rye, Sweet Corn	3 months	4 months
Alfalfa, Clover, Oats, Sugar Beet (if soil is tilled prior to planting)	4 months	5 month
Alfalfa, Clover, Oats, Sugar Beet (if no tillage is performed)	8 months	10 months

[1] Where Afforia is used on light textured soils, such as sands and loamy sands, extend time to planting by 7 additional days. Where Afforia is used on high pH soils (>7.9), extend time to planting by 7 additional days.

[2] In the states of DE, IN, KY, MD, NJ, NC, OH, PA, SC, TN and VA, Afforia may be applied at a minimum of 7 days before planting wheat if used on no-till or minimum tillage fields. Do not use on Durum wheat and do not irrigate between emergence and spike. Wheat must be planted at least 1 inch deep. Do not graze until wheat has reached 5 inches in height.

*At least one inch of rainfall/irrigation must occur between application and planting or crop injury may occur.

*Use greater than 3.0 oz/A to maximize waterhemp and Palmer Amaranth control (consult label for details)

Preemergence Application:

Afforia® herbicide	***2.5 oz***
+ Glyphosate	*32 oz*
+ COC/MSO	*1 gal/100 gal*
+ AMS	*8.5-17 lbs/100 gal*

Consider:

+ Metribuzin	*4-6 oz dry*

- Apply up to three days after planting (prior to cracking)
- Risk of crop injury can be minimized by avoiding poorly drained soils, planting at least 1.5" deep and completely covering seeds with soil
- Do not irrigate when soybeans are cracking
- Do not apply more than 3.75 ounces per acre of Afforia per year
- Use 15-20 gal/A spray volume
- Follow appropriate 2,4-D and Elevore® herbicide preplant intervals for soybeans

Elevore®

Arylex™ active

HERBICIDE

Active Ingredient(s): halauxifen-methyl
Site of Action: Group 4
Formulation Type: SC
Package Size(s): 4 x 1 qt. bottle
Rainfast: 1 hour
Pre-harvest Interval: N/A

Features:

- Elevore is a new burndown herbicide designed to elevate growers' weed control programs.
- Features Arylex® active, a new Group 4 growth regulator herbicide.
- Labeled for burndown applications in multiple crops, including soybeans, corn and cotton.
- When added to a burndown program, Elevore will offer thorough control of labeled broadleaf weeds, including glyphosate- and ALS-resistant species such as henbit, chickweed and marestail up to 8-inches tall.
- Effective weed control in cooler temperatures

Top Weeds Controlled	
Catchweed bedstraw	Marestail/ Horseweed
Chickweed	Pigweed, red root
Common Hempnettle	Purple Deadnettle
Flixweed	Ragweed, common
Henbit	Wild Garlic

See label for complete list of weeds controlled.

Recommendation(s):

Fall Application:

Elevore® herbicide	***1 oz***
+ MSO or COC	*1 gal/100 gal*
+ Glyphosate	*32 oz*
Consider:	
+ 2,4-D	*1 pt*
+ **Afforia®** herbicide	*2.5 oz*

Preplant Burndown Application:

Elevore	***1 oz***
+ MSO or COC	*1 gal/100 gal*
+ Glyphosate	*32 oz*
Consider:	
+ 2,4-D	*1 pt*
+ **Afforia**	*2.5 oz*
+ Metribuzin	*4-6 oz dry*

- Observe all plant back restrictions listed on the label, 14 days to soybeans
- Follow appropriate 2,4-D and Elevore preplant interval

Untreated

Glyphosate 32 oz

Elevore 1 oz + glyphosate 32 oz

Notes:

Enlist One®

COLEX•D® technology

HERBICIDE

Active Ingredient(s): 2,4-D choline salt
Site of Action: Group 4
Formulation Type: WSL
Package Size(s): 2 x 2.5 gal jug, 250 gal, bulk
Rainfast: 4 hours
Pre-harvest Interval: Refer to federal label for specific crop PHI

Features:

- Straight-good 2,4-D choline with additional tank-mix flexibility
- 2,4-D choline as the basis for exceptional weed control
- Compatibility to tank-mix with qualified glufosinate, glyphosate, residual herbicides, insecticides and more
- Customize the ratio of herbicides to match each farm's needs
- Follow tank mix sequence in Enlist section.

For use with Enlist traited crops

Enlist E3® SOYBEANS

Recommendation(s):

Burndown Application:

Enlist One® herbicide	***2 pts***
+ AMS	*8.5-17 lbs/100 gal*

- Follow appropriate plant back restrictions for non-Enlist Crops

Enlist E3® Soybean Preemergence Application:

Enlist One	***2 pts***
+ AMS	*8.5-17 lbs/100 gal*
+ Glyphosate	*32 oz*

Consider adding one of the following residuals:

+ **Afforia®** herbicide	*2.5 oz*
or **Envive®** herbicide	*2.5-5 oz*
or **Kyber®** Pro herbicide	*16 oz*
or **Sonic®** herbicide	*5-6 oz*
or **Surveil®** herbicide	*3.5-4.2 oz*

- Do not exceed 2.5 oz of Envive if soil pH is greater than 7.0

Top Weeds Controlled

Broad-spectrum broadleaf control

See label for complete list of weeds controlled.

Enlist E3 Soybean Postemergence Application:

Enlist One	***2 pts***
+ AMS	*2-3 lbs ac*
+ Glufosinate (2.34 lbs a.i/gal) or glyphosate	*32 oz*
+ COC or	*0.5-1% v/v*
HSCOC or HSMSO^	*0.25-0.5% v/v*

^When adding EC herbicides or Group 15 herbicides or under hot humid conditions run the lower range of the COC or HSCOC or HSMSO %v/v. See the label for more information.

Consider:

+ **EverpreX®** herbicide	*1-1.33 pts*
or **Enversa™** herbicide	*48 oz*

- Use a full herbicide program approach with multiple modes of action.
- Always use Enlist One with a qualified tank mix partner or a sequential herbicide pass - never use Enlist One as the only post mode of action on E3 soybean acres.
- Find a full list of qualified tank mix partners at EnlistTankMix.com

Multiple glyphosate and glufosinate products are qualified tank mix partners.
For more information, visit **EnlistTankMix.com**

Enlist Duo®

COLEX•D® technology

HERBICIDE

Active Ingredient(s): 2,4-D choline salt + glyphosate

Site of Action: Group 4 + Group 9

Formulation Type: WSL

Package Size(s): 2 x 2.5 gal jug, 250 gal, bulk

Rainfast: 4 hours

Pre-harvest Interval: N/A

Features:

- Convenient proprietary blend of 2,4-D choline and glyphosate
- Multiple modes of action in a convenient blend
- Fit for acres where grass control is needed; works well for burndown
- Improved tank stability for a blend that stays mixed
- Follow tank mix sequence in Enlist section.

For use with Enlist traited crops

Enlist E3® SOYBEANS

Top Weeds Controlled

Broad-spectrum grass and broadleaf control

See label for complete list of weeds controlled.

Recommendation(s):

Burndown Application:

Enlist Duo® herbicide	***4.75 pts***
+ AMS	*8.5-17 lbs/100 gal*

- Follow appropriate plant back restrictions for non-Enlist Crops

Enlist E3® Soybean Preemergence Application:

Enlist Duo	***4.75 pts***
+ AMS	*8.5-17 lbs/100 gal*

Consider adding one of the following residuals:

+ Afforia® herbicide	*2.5 oz*
or **Envive®** herbicide	*2.5-5 oz*
or **Sonic®** herbicide	*5-6 oz*
or **Surveil®** herbicide	*3.5-4.2 oz*

- Do not exceed 2.5 oz of Envive if soil pH is greater than 7.0

Enlist E3 Soybean Postemergence Application:

Enlist Duo	***4.75 pts***
+ AMS	*8.5-17 lbs/100 gal*

- Use a full herbicide program approach with multiple modes of action.
- Find a full list of qualified tank mix partners at EnlistTankMix.com.

For more information, visit **EnlistTankMix.com**

CORTEVA™ agriscience

Enlite®

HERBICIDE

Active Ingredient(s): flumioxazin + chlorimuron ethyl + thifensulfuron methyl
Site of Action: Group 14 + Group 2
Formulation Type: DG
Package Size(s): 8 x 84 oz. bottle
Rainfast: 1 hour
Pre-harvest Interval: N/A

Features:

- Applied before or at planting Enlite herbicide delivers excellent weed control for soybeans in a variety of soil types and growing conditions with no soil pH restrictions.
- Two modes of action deliver consistent control of the toughest weeds, including winter annuals, dandelion, waterhemp and other glyphosate- or ALS-tolerant or resistant weeds.
- Reliable control even under cool, wet conditions.

Top Weeds Controlled	
Chickweed	Morningglory
Dandelion	Nightshade
Henbit	Palmer Amaranth
Lambsquarters	Pigweed species
Marestail/Horseweed	Waterhemp

See label for complete list of weeds controlled.

Recommendation(s):

Preplant Burndown Application:

Enlite® herbicide	***2.8-4 oz***
+ Glyphosate	*32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ 2,4-D	*1 pt*
+ COC	*1 gal/100 gal*

Consider:

+ Metribuzin	*4-6 oz dry*

Preemergence Application:

Enlite	***2.8-4 oz***
+ Glyphosate	*32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ COC	*1 gal/100 gal*

Consider:

+ Metribuzin	*4-6 oz dry*

- May be tank mixed with metribuzin, pendimethalin or pyroxasulfone. Consult label for other tank mix partners
- Do not apply more than a total of 0.82 ounces ai per acre chlorimuron ethyl in the Central Region States in any one soybean cropping cycle
- Use greater than 3.5 oz/A to maximize waterhemp and Palmer amaranth control (consult label for details)

- Follow appropriate 2,4-D preplant interval
- Applications must be made prior to soybean emergence.

Envive®

HERBICIDE

Active Ingredient(s): flumioxazin + chlorimuron ethyl + thifensulfuron methyl
Site of Action: Group 14 + Group 2
Formulation Type: DG
Package Size(s): 8 x 88 oz. bottle
Rainfast: 1 hour
Pre-harvest Interval: N/A

Features:

- Highly effective control through preemergence applications for more consistent control of challenging weeds in soybean fields.
- Two modes of action help manage waterhemp, marestail, Palmer amaranth, lambsquarters, winter annuals and other tough weeds.
- Reliable burndown of winter annuals and perennial weeds, even in cool fall or spring conditions

Top Weeds Controlled

Chickweed	Palmer Amaranth
Cocklebur	Pigweed species
Dandelion	Ragweed, giant and common
Henbit	Sunflower
Lambsquarters	Velvetleaf
Marestail/Horseweed	Waterhemp
Morningglory, annual	
Nightshade	

See label for complete list of weeds controlled.

Recommendation(s):

Preplant Application:

Envive® herbicide	***2.5-5 oz***
+ Glyphosate	*32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ 2,4-D	*1 pt*
+ COC	*1 gal/100 gal*

Consider:

+ Metribuzin	*4-6 oz dry*

Preemergence Application:

Envive	***2.5-5 oz***
+ Glyphosate	*32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ COC	*1 gal/100 gal*

Consider:

+ Metribuzin	*4-6 oz dry*

- Follow appropriate 2,4-D preplant interval
- Applications must be made prior to soybean emergence.
- May be tank mixed with metribuzin, pendimethalin or pyroxasulfuone. Consult label for tank mix partners
- DO NOT exceed 2.5 oz/acre Envive on soils with a composite pH greater than 7.0 in the Central Region.
- Do not apply more than 0.82 oz. ai per acre chlorimuron ethyl in Central Region States in any one soybean cropping Cycle

Enversa™

HERBICIDE

Active Ingredient(s): Acetochlor
Site Of Action: Group 15
Formulation Type: CS
Package Size(s): 2x2.5s, 250 gal
Rainfast: N/A

Features:

- Proprietary acetochlor (Group 15) formulation for residual control of tough-to-control weeds
- Versatility in application timing
- Drives to the soil from the leaf surface with proprietary encapsulation, creating strong residual control
- Encapsulated acetochlor for excellent crop safety
- Great handling and tank-mix compatibility

For use with Enlist traited crops

Enlist E3® SOYBEANS

Recommendation(s):

Postemergence Application:

Enversa herbicide	***3 pts***

Enlist E3® Soybean Postemergence Application:

+ Enlist® One herbicide	*2 pts*
+ Glufosinate (2.34 lbs a.i/gal) or glyphosate	*32 oz*
+ COC or	*0.5-1% v/v*
HSCOC or HSMSO^	*0.25-0.5% v/v*

^When adding EC herbicides or Group 15 herbicides or under hot humid conditions run the lower range of the COC or HSCOC or HSMSO %v/v. See the label for more information.

- **Maximum Rate:** 2 qts/A (1.5 lb ai/acre)
  - » See label for specific O.M and soil type.
- **Maximum Annual Rate:** 4 qts/A (3 lb ai/acre) when making a second application, including a postemergence application to soybeans
- Application of this product with other postemergence or soil applied herbicides may increase the potential for crop injury.
- Application of this product followed by conditions that do not favor adequate crop growth or which cause stress (cold, wet soils), or under waterlogged conditions from excessive irrigation or rainfall, may result in crop injury.
- If utilizing Enlist One on Enlist E3 soybeans, find a full list of qualified tank mix partners at EnlistTankMix.com

Top Weeds Controlled	
Amaranth, Palmer	Panicum, fall
Barnyardgrass	Pigweed, spp.
Foxtail, giant, green, purple, white, yellow	Signalgrass, Broadleaf
Lambsquarters, common	Waterhemp, common, tall

** Partial control*

See label for complete list of weeds controlled.

Crop Rotations	Interval
If a crop treated with this product is lost: Corn (field, seed, silage, pop)*, cotton*, milo* (sorghum), peanut* or soybean*	Immediate
Soybeans*, corn* (all types), cotton*, milo* (sorghum), tobacco, sugar beets, sunflowers, potatoes (not including sweet potato), barley, buckwheat, millet (pearl and proso), oats, rye, rice, teonsinte, triticale, wild rice, dried shelled pea and bean subgroup*	Next Spring
Alfalfa, clover, kudzu, lespedeza, lupin, sanfoin, trefoil, velvet bean, and Vetch spp.	9 months

*See label for full details

CORTEVA™ agriscience

EverpreX®

HERBICIDE

Active Ingredient(s): s-metolachlor
Site of Action: Group 15
Formulation Type: EC
Package Size(s): 2 x 2.5 gal jug, 250 gal, bulk
Rainfast: N/A
Pre-harvest Interval: 90 days

Features:

- Provides an extended layered residual control of tough weeds, including waterhemp, lambsquarters, Palmer amaranth and other glyphosate and ALS-tolerant weeds.
- Can be applied to soybeans early preplant, preplant incorporated, preemergence and postemergence.
- Wide application window: 45 days prior to planting to up to 90 days before harvest.
- Easy-to-use liquid formulation compatible with many other soybean herbicides.

Top Weeds Controlled	
Annual Grasses - Many	Pigweed species
Lambsquarters	Waterhemp
Palmer Amaranth	

See label for complete list of weeds controlled.

Recommendation(s):

Preemergence Application:

EverpreX® herbicide	***1-2 pt***
+ Glyphosate	*32 oz*
+ AMS	*8.5-17 lbs/100 gal*

Enlist E3® Soybean Postemergence Application:

EverpreX	***1-1.33 pt***
+ Glufosinate (2.34 lbs a.i/gal) or glyphosate	*32 oz*
+ AMS	*2-3 lbs ac*
+ **Enlist One®** herbicide (Enlist E3 soybeans only)	*1 qt*

All Trait Technologies Postemergence Application:

EverpreX	***1-1.33 pt***
+ Approved tank-mix partner with postemergence broadleaf and grass activity	

- Great layered residual herbicide for Enlist E3 soybeans, RR2, RRXtend, nonGMO and Liberty Soybeans
- Find a full list of qualified tank mix partners at EnlistTankMix.com.

8oz Trivence® herbicide applied 4/28/2020. Soybeans planted 4/26/2020
Post: Enlist One® 1qt, EverpreX® 1pt, glyphosate 1qt applied 6/10/2020
Picture taken 6/16/2020

Kyber® Pro

HERBICIDE

Active Ingredient(s): Flumioxazin + Metribuzin + Pyroxasulfone

Site Of Action: Group 14 + Group 5 + Group 15

Formulation Type: SC

Package Size(s): 2x2.5s, 265 gal

Rainfast: 1 hr

Pre-harvest Interval: 40 days

Features:

- 3 proven modes of action for one comprehensive solution
- 4-6 weeks of residual control; may exceed 6 weeks in the right conditions
- Long-lasting residual creates wider window for postemergence applications
- Controls tough, resistant weeds like, Palmer amaranth, common ragweed and waterhemp
- Perfect addition to program approach with burndown and postemergence herbicide
- Convenient, easy-to-handle liquid premix
- Excellent herbicide resistance management tool with three effective modes of action
- Rotational flexibility, including for use ahead of field corn and seven-day plant back interval for field corn in no-till/minimum-till fields

Top Weeds Controlled	
Chickweed	Marestail (horseweed)
Crabgrass	Mustard, Wild
Foxtail	Palmer amaranth
Goosegrass	Pigweed (smooth, redroot, tumble)
Jimsonweed	Ragweed, Common
Kochia	Velvetleaf
Lambquarters, Common	Waterhemp

See label for complete list of weeds controlled.

Recommendation(s):

Preplant Burndown Application:

Kyber® Pro herbicide	***1 pt***
+ Glyphosate	*32 oz*
+ AMS	*8.5 - 17 lbs/100 gal*
+ 2,4-D	*1 pt*
+ COC or MSO	*1 gal/100 gal*

Preemergence Application:

Kyber Pro	***1 pt***
+ Glyphosate	*32 oz*
+ AMS	*8.5 - 17 lbs/100 gal*
+ COC or MSO	*1 gal/100 gal*

- **Max Application:** 1.5 pt/A (0.094 lb flumioxazin, 0.281 lb metribuzin and 0.120 lb pyroxasulfone)
- **Max Annual Application:** 1
- **Max Annual Rate:** 1.5 pt/A (0.094 lb flumioxazin, 0.281 lb metribuzin and 0.120 lb pyroxasulfone)
- Do not graze treated soybean fields or feed treated forage or hay to livestock within 40 days of treatment
- Do not irrigate when soybeans are cracking
- Apply within 3 days after planting and prior to soybean emergence
- Follow appropriate 2,4-D preplant interval

Crop Rotation	Use Rate Interval (pt/A)		
	1	1.25	1.5
Soybean	0	0	0
Corn, *Field (minimum/no till)*	7d	1m	1m
Corn, *Field (conventional till)*	1m	1m	1m
Peas, *Field*	2m	4m	4m
Corn, *Sweet*	4m	4m	4m
Lentils	6m	7m	7m
Wheat (*4m if following Peas, Lentils, or Soybeans)*	8m	8m	8m
Edible peas and other edible beans (*except Field Peas)*	9m	9m	11m
Potato	9m	9m	9m
Alfalfa	10m	10m	10m
Small Grains (*other than Wheat)*	11m	12m	12m
Dry Beans (*edible),* Rice, Sunflower, Tobacco	12m	12m	12m
Canola, Clover, Cotton *(conventional and reduced till),* Grass *(grown for seed and with charcoal band),* Peanuts	18m	18m	18m
Other crops not listed above	18m	18m	18m

See label for full details | **m:** *Months* | **d:** *Days*

Sonic®

HERBICIDE

Active Ingredient(s): sulfentrazone + cloransulam-methyl
Site of Action: Group 14 + Group 2
Formulation Type: WDG
Package Size(s): 2 x 7.5 lb jug
Rainfast: N/A
Pre-harvest Interval: 65 days

Features:

- Sonic® herbicide provides long-lasting residual control of today's toughest broadleaf weeds in soybeans — including marestail, ragweed, waterhemp and Palmer amaranth — before they have a chance to rob yield.
- Contains two non-glyphosate modes of action to control weeds multiple ways and effectively manage weed resistance to protect soybean yield potential.
- Can be applied preemergence up to three days postplant by ground or aerial application.
- By applying Sonic herbicide early, growers are protecting their soybean fields from yield-robbing weeds with outstanding crop safety.

Top Weeds Controlled	
Chickweed	Palmer Amaranth
Cocklebur	Pigweed species
Dandelion	Ragweed, giant and common
Henbit	
Lambsquarters	Sunflower
Marestail/Horseweed	Velvetleaf
Morningglory, annual	Waterhemp

See label for complete list of weeds controlled.

Recommendation(s):

Preplant Burndown Application:

Sonic® herbicide	***4-6 oz***
+ Glyphosate	*32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ 2,4-D	*1 pt*
+ COC	*1 gal/100 gal*

Consider:

+ Metribuzin	*4-6 oz dry*

Preemergence Application:

Sonic	***4-6 oz***
+ Glyphosate	*32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ COC	*1 gal/100 gal*

Consider:

+ Metribuzin	*4-6 oz dry*
or EverpreX® herbicide	*1 pt*

- Follow appropriate 2,4-D preplant interval
- Applications must be made prior to soybean emergence.

45 days after application - Sonic applied at 4 oz

Sonic® Boom

HERBICIDE

Active Ingredient(s): Metribuzin + Sulfentrazone
Site Of Action: Group 5 + Group 14
Formulation Type: SC
Package Size(s): 2x2.5s, 260 gal
Rainfast: N/A
Pre-harvest Interval: 14 days

Features:

- 2 proven modes of action – sulfentrazone (Group 14) and metribuzin (Group 5) – for control of more than 35 hard-to-control or resistant broadleaf weeds, with suppression of many problematic grasses common to soybeans
- Versatile application timing – fall burndown, preplant and preemergence
- Long-lasting residual of 4 - 6 weeks
- Excellent crop safety for a strong start that can help maximize yield potential
- Liquid formulation that is convenient and easy-to-use

Top Weeds Controlled

Amaranth (*Palmer, spiny*)
Carpetweed
Copperleaf
Jimsonwood
Kochia
Lambsquarter (*common*)
Morningglory (*entireleaf, ivyleaf, palmleaf, purple, red, smallflower, tall*)
Nightshade (*eastern black, hairy, silverleaf*)
Pigweed (*redroot, smooth*)
Sida (*prickly, Teaweed*)
Velvetleaf
Waterhemp (*common, tall*)

See label for complete list of weeds controlled.

Recommendation(s):

Preplant Burndown Application:

Sonic® Boom herbicide	***18-21 oz*****
+ Glyphosate	*32 oz*
+ 2,4-D*	*1 pt*
+ COC or MSO	*1 gal/100 gal*

- Additional modes of action for residual would include a group 15 product like EverpreX® herbicide.

Preemergence Application:

Sonic Boom	***18-21 oz*****
+ Glyphosate	*32 oz*
+ COC or MSO	*1 gal/100 gal*

Consider:

+ EverpreX® herbicide	*1 pt*

- **Max Annual Applications:** 1
- **Max Annual Rate:** 26 fl oz/A (0.45 lb metribuzin + 0.23 lb sulfentrazone)
- The annual period is considered to begin upon the initial Sonic Boom application.
- DO NOT apply to soils with less than 1% organic matter.
- On Coarse soils with 1-2% organic matter, do not exceed 14 oz Sonic Boom.
- Adverse crop response can occur on soils with pH greater than 7.5. To reduce adverse crop response, use a maximum of 11 fl oz/A on soils with pH greater than 7.5.
- DO NOT graze treated soybean or harvest for forage or hay.
- DO NOT apply by air.

*Consult 2,4-D label for plant back restrictions **Based on soil texture and organic matter.

Crop Rotation	Interval
Soybeans, Sugarcane, Tomatoes†	0
Field Corn†, Barley, Wheat	4m
Rice	10m
Alfalfa, Asparagus, Cotton†, Dry Beans, Peanuts, Potato, Sorghum† Sunflower, Tobacco	12m
Cotton, Sorghum†, Sweet Corn	18m
All other crops not listed	18m
Canola, Sugar beets†	24m

†Refer to label for full details | **m:** *Months* | **d:** *Days*

Surveil®

HERBICIDE

Active Ingredient(s): flumioxazin + cloransulam-methyl
Site of Action: Group 14 + Group 2
Formulation Type: WDG
Package Size(s): 2 x 7.5 lb jug
Rainfast: 2 hours
Pre-harvest Interval: N/A

Features:

- Best in class premix formulation with superior mixing and handling characteristics, so it is easy for soybean growers and custom applicators to use.
- Features a powerful double barrier of protection effective on today's most high anxiety weeds in soybeans including waterhemp, Palmer amaranth, marestail and morningglory.
- Residual control of weeds keeps soybeans from competing for sunlight and nutrients.
- Can be applied preplant and up to three days postplant.

Top Weeds Controlled	
Chickweed	Palmer Amaranth
Cocklebur	Pigweed species
Dandelion	Ragweed, giant and common
Henbit	Velvetleaf
Lambsquarters	Waterhemp
Marestail/Horseweed	
Morningglory, annual	

See label for complete list of weeds controlled.

Recommendation(s):

Preplant Burndown Application:

Surveil® herbicide	***2.8-4.2 oz***
+ Glyphosate	*32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ 2,4-D	*1 pt*
+ COC	*1 gal/100 gal*

Consider:

+ Metribuzin	*4-6 oz dry*

Preemergence Application:

Surveil	***2.8-4.2 oz***
+ Glyphosate	*32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ COC	*1 gal/100 gal*

Consider:

+ Metribuzin	*4-6 oz dry*

- Follow appropriate 2,4-D preplant interval
- Applications must be made prior to soybean emergence.
- May be tank mixed with metribuzin, or pendimethalin. Consult label for tank mix partners

Surveil® vs untreated check 4 weeks after treatment

Synchrony® XP

HERBICIDE

Active Ingredient(s): chlorimuron ethyl + thifensulfuron methyl

Site of Action: Group 2

Formulation Type: WDG

Package Size(s): 8 x 15 oz. bottle

Rainfast: 1 hour

Pre-harvest Interval: Refer to federal label for specific crop PHI

Features:

- For an STS® and Bolt™ technology/Roundup Ready soybean seed system.
- Affordable tank-mix partner that boosts glyphosate activity in a burndown application or a postemergence application.
- Offers more effective burndown and residual broadleaf weed control with greater flexibility in the busy spring season and earlier soybean plantings.
- There is no waiting to plant after applying Synchrony XP in a burndown application.

Top Weeds Controlled	
Cocklebur	Smartweed, annual
Lambsquarters	Sunflower
Morningglory	Velvetleaf
Ragweed, common	

See label for complete list of weeds controlled.

Recommendation(s):

Postemergence Application:

Synchrony® XP herbicide	***0.375 oz***
+ AMS	*8.5-17 lbs/100 gal*
+ COC or	*1 gal/100 gal*
NIS	*1 qt/100 gal*

Consider:

+ EverpreX® herbicide	*1 pts*

- Higher rates of Synchrony XP maybe applied to STS soybean varieties.
- Do not apply more than a total of 0.75 ounces ai of thifensulfuron methyl per acre per year
- Do not apply more than a total of 0.82 ounces ai chlorimuron ethyl per acre per year
- On non-STS® soybeans apply after the first trifoliate but no later than 60 days before soybean maturity
- A temporary crop response may occur following an application of Synchrony XP to soybeans not designated STS® or soybeans without BOLT™ technology

Trivence®

HERBICIDE

Active Ingredient(s): flumioxazin + chlorimuron ethyl + metribuzin

Site of Action: Group 14 + Group 2 + Group 5

Formulation Type: WDG

Package Size(s): 2 x 200 oz. bottle

Rainfast: 1 hour

Pre-harvest Interval: N/A

Features:

- Three modes of action for strong burndown and extended residual control of resistant weeds in soybeans.
- Consistent control and improved weed-resistance management of tough weeds, including Palmer amaranth, marestail,* waterhemp , giant ragweed, morningglory, lambsquarters* and other broadleaf weeds.
- Preservation of key chemistries when used as part of an integrated weed-control program.
- * For the best burndown results, the addition of 2,4-D is recommended, and is required for control of some weeds. Consult the label for details.

Top Weeds Controlled	
Chickweed	Palmer Amaranth
Cocklebur	Pigweed species
Dandelion	Ragweed, giant and common
Henbit	Velvetleaf
Lambsquarters	Waterhemp
Marestail/Horseweed	
Morningglory, annual	

See label for complete list of weeds controlled.

Recommendation(s):

Preplant Burndown Application:

Trivence® herbicide	***6-8 oz***
+ Glyphosate	*32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ 2,4-D	*1 pt*
+ COC	*1 gal/100 gal*

Preemergence Application:

Trivence	***6-8 oz***
+ Glyphosate	*32 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ COC	*1 gal/100 gal*

- Follow appropriate 2,4-D preplant interval
- Applications must be made prior to soybean emergence.
- Do not exceed 6 oz/acre of Trivence on soils with a composite pH greater than 7.0 in the Central Region.
- Do not apply more than 0.82 oz. ai per acre chlorimuron ethyl in Central Region States in any one soybean cropping cycle

8 oz Trivence® Sprayed April 21st. Picture taken June 9th

Notes:

Notes:

Enlist® weed control system

Enlist™ weed control system

Enlist Duo® COLEX-D® technology HERBICIDE

Enlist One® COLEX-D® technology HERBICIDE

ENLIST® HERBICIDES

Exceptional weed control to fit your needs.

Made for use with cotton, soybeans and corn with the Enlist® trait, Enlist Duo® and Enlist One® herbicides each feature 2,4-D choline with Colex-D® technology.

The result: unrivaled weed control designed to land and stay on target.

Use Enlist® herbicides as part of a program approach

You'll have the greatest success in weed management if you use an Enlist herbicide as part of a program approach for weed control in Enlist crops. This improves weed control, reduces weed competition during key stages of crop growth and helps manage herbicide resistance.

Key items to remember:

- Enlist herbicides can be used in burndown, preemergence and postemergence on crops with the Enlist trait
- Up to three applications may be made per season at the high rate:
  - » One application in burndown or preemergence
  - » Up to two applications postemergence, at least 12 days apart
- Always use a true broad-spectrum soil residual herbicide (not Group 4 or Group 9)
- Consider using a layered residual, such as S-metolachlor, in your post passes for longer-lasting weed control

For season-long weed control in Enlist crops, start with a broad-spectrum soil residual herbicide containing at least two non-Group 4 or non-Group 9 (if using Enlist Duo) or non-Group 4 (if using Enlist One) modes of action, followed by a postemergence application of Enlist Duo or Enlist One. If a second post application of Enlist Duo or Enlist One is needed, wait at least 12 days after the first application.

Enlist Duo® herbicide

Convenient proprietary blend of 2,4-D choline and glyphosate

Enlist One® herbicide

Straight goods 2,4-D choline with additional tank-mix flexibility

Proprietary Colex-D technology enables on-target application, delivering unrivaled weed control to protect your crops — and your neighbor's crops.

CORTEVA™ agriscience

Enlist Duo®
COLEX•D® technology

HERBICIDE

Complete convenience.

Only Enlist Duo® herbicide combines the proven performance of 2,4-D choline and glyphosate.

The two modes of action work together to deliver control of yield-robbing weeds and help prevent resistance.

This easy-to-use proprietary blended herbicide allows:

1. Improved control from two modes of action
2. Multiple modes of action in a convenient blend
3. Improved tank stability for a blend that stays mixed
4. Practical tank cleanout procedure

Application Rate
4.75 pt/A

Enlist One®
COLEX•D® technology

HERBICIDE

Additional tank-mix flexibility.

Enlist One® herbicide provides additional tank-mix flexibility with glyphosate herbicide, Liberty herbicide and other qualified tank-mix products, allowing for a customized weed control program to fit each farm. Farmers gain superior control of resistant and hard-to-control broadleaf weeds.

With more tank-mix flexibility, Enlist One® herbicide delivers:

1. 2,4-D choline as the basis for exceptional control
2. Compatibility to tank-mix with qualified glufosinate, residual herbicides and insecticides
3. Customize the ratio of herbicides to match each farm's needs
4. Flexibility to choose different modes of action to manage resistance

Application Rate
2 pt/A

On-target application.

90% less drift
than traditional 2,4-D

The drift reduction from Colex-D® technology combines with low-drift nozzles to cut drift by as much as 90% compared with traditional 2,4-D.

96% less volatile
than 2,4-D ester

Near-zero volatility — helps keep Enlist herbicides in place and improve control.

Wide application window
Enlist® cotton Up to first white bloom
Enlist E3® soybeans Through R1 growth stage
Enlist® corn **Broadcast applications:** up to V8 or 30" corn **Drop nozzles:** up to 48" corn

Learn more about how the Enlist® weed control system can help you take control of weeds like never before, visit **Enlist.com**.

Find the most current list of allowable tank-mix products for Enlist Duo and Enlist One at **EnlistTankMix.com**.

Apply with confidence.

Review before spraying to ensure successful application.

Always read and follow label requirements.

For detailed instructions, visit **Enlist.com/Apply**

BEFORE SPRAYING

Application window

Am I spraying when **weeds are less than 6" tall**?

Am I spraying during the **right application window**?

Soybeans: through R1 growth stage

Cotton: before first white bloom

Corn: no larger than V8 growth stage or 30 inches tall; unless applying with drop nozzles, then may spray up to 48 inches tall

Tank-mix partners

Have I checked **EnlistTankMix.com** for qualified tank-mix products before planning my application?

Am I using **multiple effective sites of action**?

Pair Enlist One® herbicide with Liberty or glyphosate herbicides based on need.

Do I know the **correct tank mix sequence** as detailed on the label?

Nozzles

Am I using a qualified nozzle and corresponding pressure, as listed on Enlist.com/nozzles, to provide **optimum spray coverage**?

Sprayer contamination

Is my sprayer clean from prior applications to avoid tank contamination?

Pay special attention to wind & weather conditions

Wind speed, weather

Is the wind speed within the recommended range of **3 – 10 mph**?

Is there **no temperature inversion**?

Susceptible crops

Is the **wind blowing away** from adjacent susceptible crops, including cotton without the Enlist® trait, tomatoes, grapes and cucurbits?

APPLICATION

Spray volume

Am I using the right spray volume?

Enlist® herbicides:
10–15 gal/A; no less than 10 gal/A

Enlist One + Liberty (glufosinate) tank mix:
15–20 gal/A; no less than 15 gal/A

Spray rate

Am I spraying the correct rates?

Enlist Duo: **4.75 pt/A**

Enlist One: **2 pt./A**

Spray pressure

Am I spraying at the right pressure within the **qualified range for optimum coverage** with the nozzle I selected?

Boom height

Is my boom height **no more than 24" above crop canopy** when applying an Enlist® herbicide?

Cleanout

Am I clean-water flushing with **10% of tank volume?**

Am I **triple-rinsing** when application is complete?

Find the most current list of allowable tank-mix products for Enlist Duo and Enlist One at **EnlistTankMix.com**

Enlist Duo® COLEX-D® technology HERBICIDE

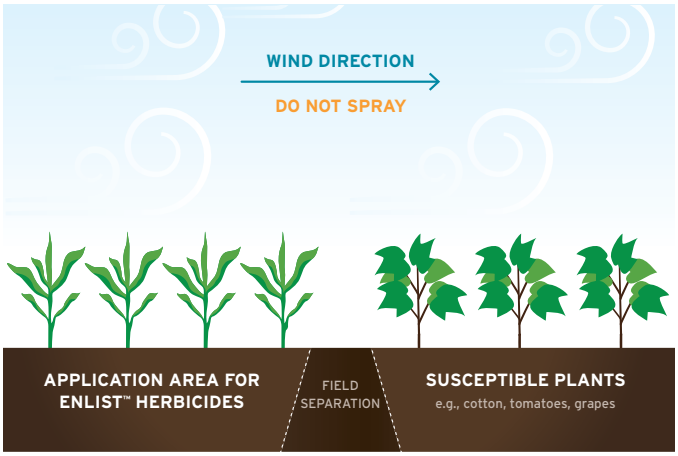
Enlist One® COLEX-D® technology HERBICIDE

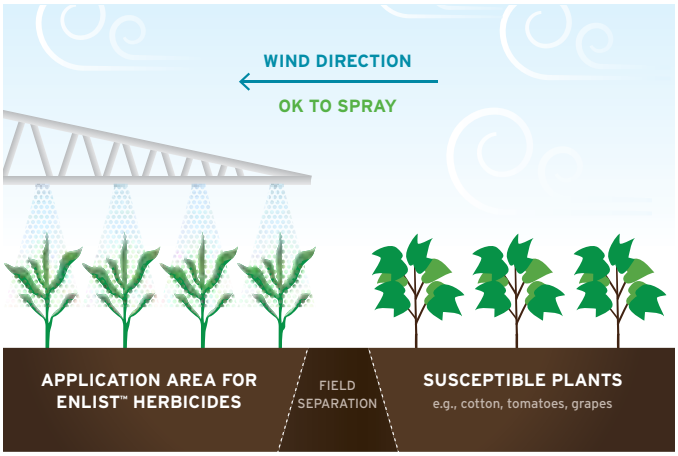
Apply with confidence.

Before making an application, please refer to your state's sensitive-crop registry (if available) to identify any commercial specialty or certified organic crops that may be located nearby.

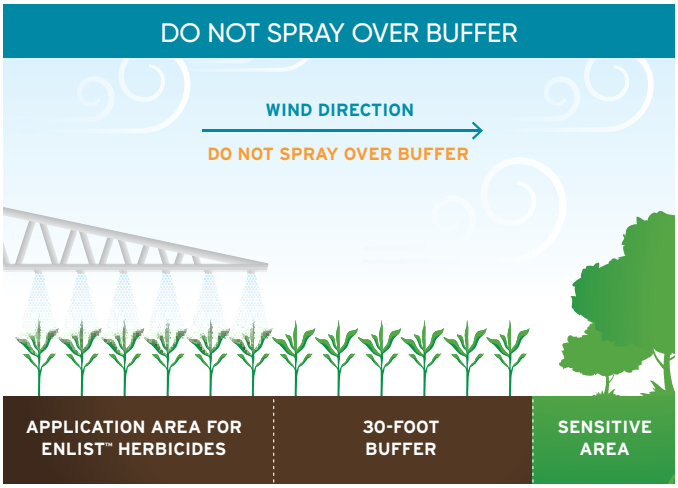
At the time of your application, the wind cannot be blowing toward adjacent commercially grown tomatoes and other fruiting vegetables (U.S. Environmental Protection Agency (EPA) Crop Group 8), cucurbits (EPA Crop Group 9), grapes or cotton without the Enlist trait.

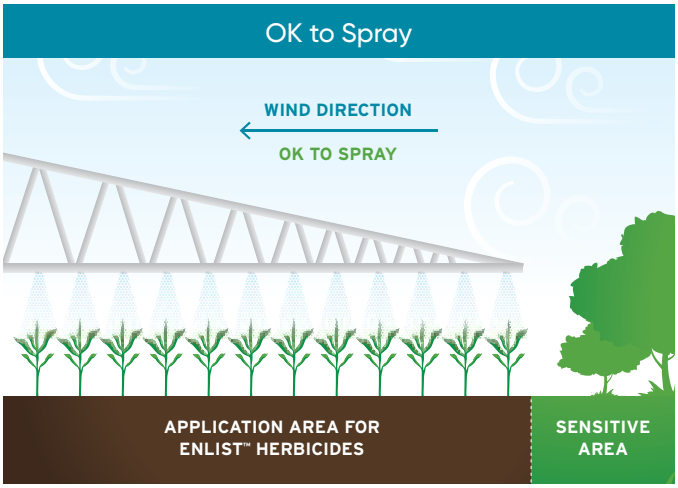
DO NOT apply an Enlist® herbicide if the wind is blowing towards susceptible crops.

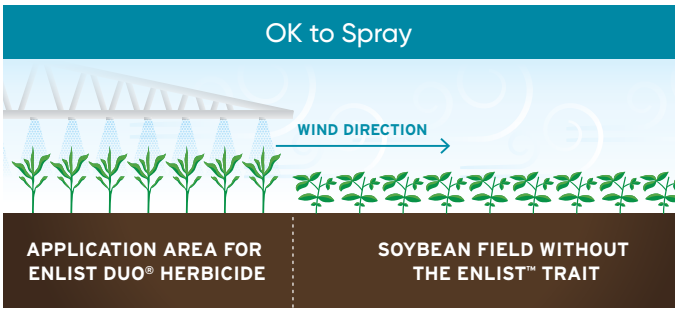




To maintain the required downwind buffer zone, measure wind direction prior to the start of any swath that is within 30 feet of a sensitive area. No application swath can be initiated in or into an area that is within 30 feet of a sensitive area if the wind direction is toward the sensitive area







Enlist® herbicides tank-mix sequence procedures

Be sure to start with a clean sprayer before mixing a load with Enlist herbicides. Remember the required water carrier volume with Enlist herbicides is 10-15 gallons per acre. For more tips on sprayer setup, see the Enlist herbicides application guide.

General Mixing Steps - Water as Carrier

1. **Read Labels:** Read all labels carefully. Contact manufacturers if you have any questions
2. **Shake Liquids:** Shake all containers with liquids before adding to ensure thorough mixing the formulation
3. **Add Water:** Fill tank with 50% of the required water volume
4. **Agitate:** Start agitation when the tank is half full — before adding the first product. Continue agitation through the mixing process
5. **Add in Order:** Add products to the tank based on their formulation type
6. **Wait & Check:** Wait 3–5 minutes after adding dry formulations before liquid formulation additions
7. **Add Water:** Add remaining water to the tank
8. **Measure pH:** Measure the pH and hardness of the solution

Maintain constant agitation during tank-mix preparation/application and allow enough time for each product to fully disperse prior to adding the next product. If water is cold, products will require additional time to disperse.

Liquid Carrier

- **Begin with half-full tank of water**
- **Begin agitation and continue throughout mixing process**
- **Add products in order:**
  1. AMS / water conditioning agents
  2. Pre-slurry water-soluble packets
  3. Wettable powders/dry flowables
  4. Compatibility agents
  5. Liquid flowables
  6. Capsule suspension (CS) or suspension emulsion (SE)
  7. Emulsifiable concentrate (EC)
     - » Soluble liquids (SL)
     - » Enlist Duo® herbicide at 4.75 pt/A
     - » Enlist One® herbicide at 2 pt/A
       When mixing with Enlist One, do not pour glufosinate ammonium products or glyphosate potassium into the tank at the same time as Enlist One. Add products one at a time, allowing enough time for recirculation between additions of each separate product.
     - » Glyphosate products
  8. Crop Oil Concentrate (COC), NIS, other adjuvants
  9. Top off with water carrier

Tank Mix Cleanout:

Ensure your sprayer is clean from prior applications to avoid tank contamination when you spray Enlist herbicides. After an application of Enlist One or Enlist Duo herbicide, follow the triple rinse procedure on the label, and be sure to clean nozzles, boom ends, screens and transfer equipment as well.

Find the list of qualified tank mix partners at **EnlistTankMix.com**

Nitrogen Stabilizers

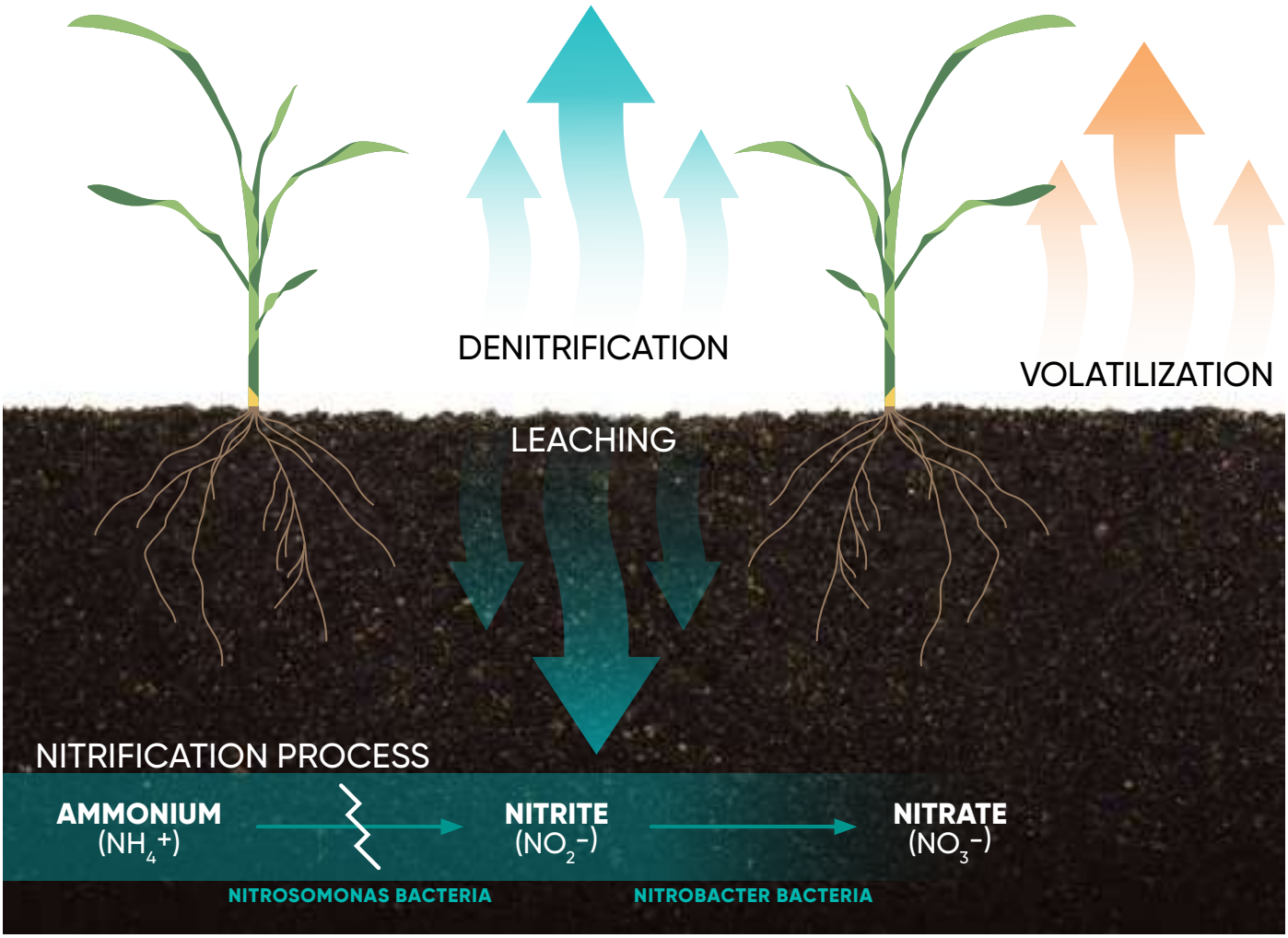
What Are The Three Forms Of Nitrogen Loss?

Spring rains and warm soil temperatures lead to heavy losses through both leaching and denitrification. Optinyte® Technology works underground, where up to 70 percent of nitrogen loss can occur through leaching into the ground or denitrification into the atmosphere, by extending nitrogen availability during corn and wheat's key growth stages.

Leaching is the loss of nitrates from the soil below the root zone due to rain and irrigation. Since soil and organic matter also are negatively charged, the nitrates are repelled and can be easily washed away, especially in coarse, sandy soils.

Denitrification refers to the loss of nitrogen when soil microbes convert nitrates to gaseous forms that can escape into the atmosphere as a greenhouse gas. Denitrification affects only nitrates, not ammonium.

Volatilization occurs when urea is converted to ammonia gas and released into the atmosphere. Volatilization can cause significant nitrogen losses when urea based fertilizers are applied on the soil surface.



The Fate Of Applied Nitrogen

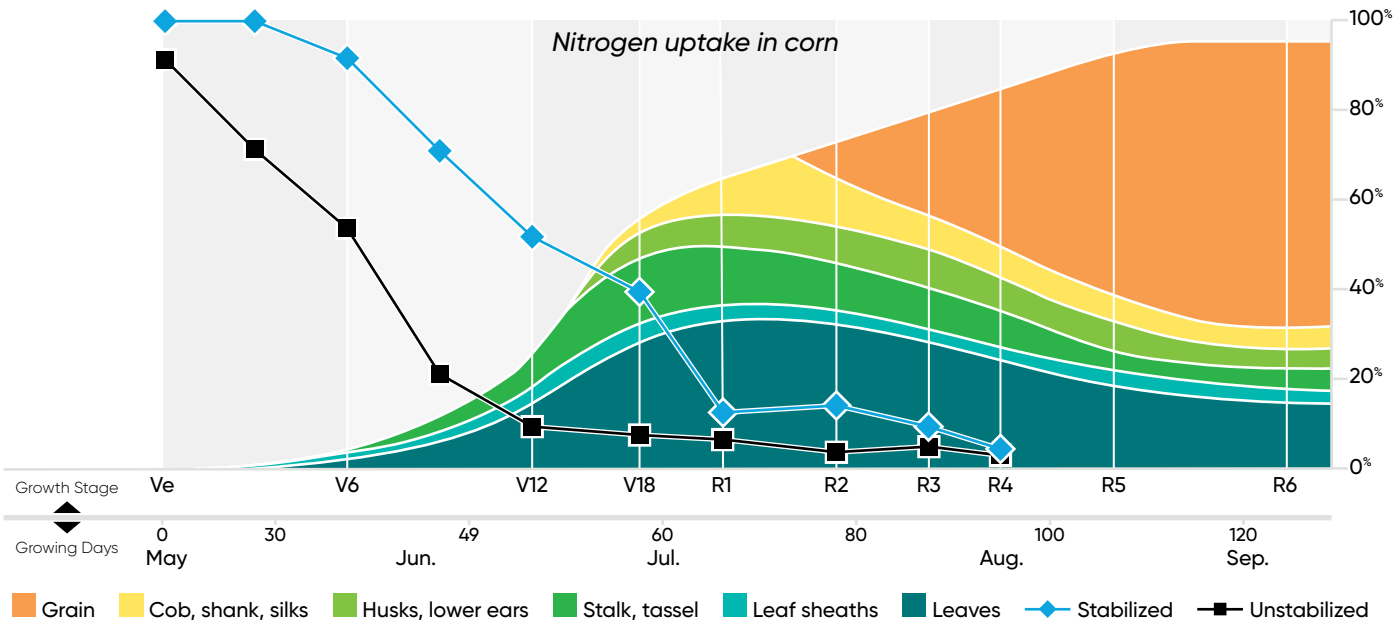
Corn uses nitrogen in two forms: ammonium (NH4+) and nitrate (NO3-). Nitrogen sources such as anhydrous ammonia and urea rapidly convert to NH_4+ after application. Ammonium carries a positive charge, which allows it to be held in place by negatively charged soil and organic matter. However, a conversion process begins when temperature sensitive *Nitrosomonas* soil bacteria convert NH_4+ to the nitrite form NO_2-. Other bacteria, *Nitrobacter*, then convert nitrite (NO_2-) to the nitrate form (NO_3-). Nitrates and nitrites both are negatively charged, so they are more susceptible to loss through leaching and denitrification.

Optinyte® Technology is an AMO enzyme inhibitor that selectively inhibits *Nitrosomonas* bacteria in the soil, keeping N in the stable ammonium form (NH_4+) longer and protected from leaching and denitrification.

Optinyte suppresses nitrifying bacteria in the soil, but does not kill bacteria.*

Nitrogen Demand

The longer nitrogen is available in the root zone, the greater the chance for corn plants to reach optimum yield potential. The time of greatest N loss from corn plants occurs in May, June and July, or anytime up to 75 days after crop emergence.



Nitrogen Uptake In Corn

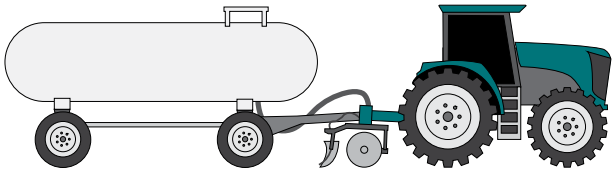
- Yield potential is determined in the first 30 to 40 days.
- Corn's nitrogen needs increase significantly after V6.
- By about three weeks before tasseling to mid-silk, corn plants have used approximately half of the season's total nitrogen.
- Approximately 80 percent of the plant's total nitrogen need occurs about 75 days after emergence.
- Unstabilized ammonium (NH4+) conversion can take as little as 1 to 3 weeks during warm conditions.

*Rodgers, G. A., and J. Ashworth. 1982. Bacteriostatic action of nitrification inhibitors. Can J Microbiol. 28: 1093-1100

Analysis of nitrogen source			
Nitrogen Source	Urea	NH_4+	NO_3-
UAN	50%	25%	25%
Urea	100%	0%	0%
Anhydrous Ammonia	0%	100% (NH3)	0%

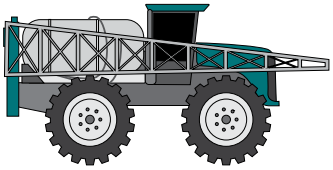
Get The Max From Any Nitrogen Source.

Any source of nitrogen is susceptible to loss through leaching or denitrification. Instinct NXTGEN® and N-Serve® nitrogen stabilizers work regardless of fertilizer type. N-Serve works with anhydrous ammonia, while Instinct NXTGEN maximizes nitrogen when used with UAN, urea and liquid manure.



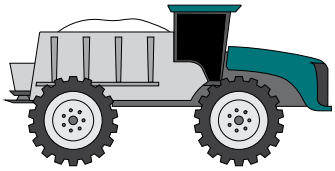
Anhydrous Ammonia (NH_3)

Add N-Serve to BOTH spring and fall applied anhydrous ammonia to get the maximum benefit. Nitrogen protected with N-Serve can withstand early season moisture events by keeping nitrogen in the ideal ammonium form longer, so it can help maximize your yield.



UAN (28% or 32%)

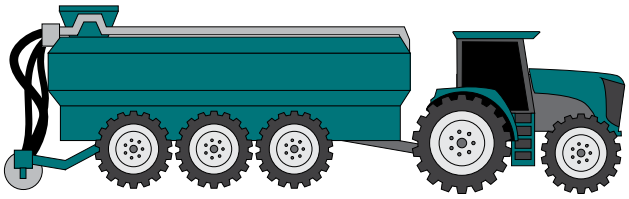
Spring rainfall drives nitrogen lower into soil profiles, out of the reach of corn roots. Instinct NXTGEN is easily mixed with UAN fertilizer solutions to protect spring-applied and sidedress nitrogen applications. Get the max from your UAN applications to get the max yield at harvest.



UREA

More Midwest farmers are adopting urea as their nitrogen source for spring, fall and sidedress applications. Instinct NXTGEN allows for easy impregnation onto urea applications.

No matter when you apply urea, make sure it's protected so your crops receive the maximum nitrogen when they need it most.



Liquid Manure

Instinct NXTGEN can be easily mixed into the pit prior to liquid manure applications in spring or fall. University of Minnesota research** shows Instinct applied with fall swine manure provided 10 to 12 bushels per acre yield increase and reduced grain moisture by approximately 1.3 percentage points at harvest.**

*__Wolt, J.D. 2004.__ A meta-evaluation of nitrapyrin agronomic and environmental effectiveness with emphasis on corn production in the Midwest. Numbers cited are average results comparing nitrogen applications applied with Optinyte® technology vs. non-stabilized applications. Results may vary.

**__Vetsch, J., and J. Lamb. 2011.__ Applying Instinct as a nitrogen stabilizer for fall applied manure. http://blog-crop-news.extension.umn.edu/2011/10/applying-instinct-as-nitrogen.html?m=1

N-Serve®

Optinyte™ technology

NITROGEN STABILIZER

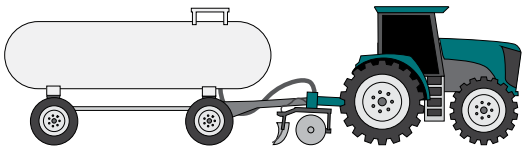
Active ingredient(s): Nitrapyrin (Optinyte® technology)
Mode of action: AMO enzyme inhibitor
Formulation type: EC
Package size(s): bulk
Bulk Density: 8.120 lb/gal

Features

- Oil-based formulation that mixes well with anhydrous ammonia
- Provides healthier corn and optimizes yield potential
- Proven and trusted technology for over 40 years
- University and 3rd party tested

Benefits:

- Reduces leaching of nitrates, denitrification, and greenhouse gas emissions
- Maximizes yield and profit potential
- Keeps nitrogen in the ammonium form longer, keeping nitrates out of waterways[1]
- Improves standability by reducing risk of stalk rot
- Enables quicker crop drydown



Recommendation(s):

Fall Application:

N-Serve® nitrogen stabilizer — ***1 qt***

- **+7 Bu/A** on average on fall stabilized acres compared to unstabilized acres[2]
- Heavy spring rains lead to heavy leaching and denitrification when nitrogen is not stabilized, N-Serve protects against both
- Fall applications reduce the potential for soil compaction and seedling injury associated with spring pre-plant applications
- Growers and fertilizer dealers can spread some of their spring workload to fall. This allows growers to complete planting in a timely manner, reducing yield loss from late planting

Spring Pre-Application:

N-Serve — ***1 qt***

(Preplant, at plant, row or band injection; preplant or at plant broadcast; planned split application)

- **+8 Bu/A** on average on spring stabilized acres compared to unstabilized acres[2]
- N-Serve protects from nitrogen loss from heavy spring rains and keeps it available for the second half of the growing season
- N-Serve protects nitrogen in the soil during key growth stages of corn. It works underground, where up to 70% of Nitrogen loss is from leaching and denitrification
- 10% of Nitrogen can be lost in three days of saturated soils from denitrification and 10% lost each additional day that soils are saturated (i.e., 20% loss in 4 days of saturated soils)

Postemergence (Sidedress) Application:

N-Serve® nitrogen stabilizer — ***0.5-1 qt***

- **+4 Bu/A** on average on sidedress stabilized acres compared to unstabilized acres[2]
- Approximately 37% of corn's total nitrogen needs still occur after tassel
- Nitrogen application occurs closer to plant uptake to minimize N loss
- Ammonium is still rapidly converting to nitrate form – the entire conversion process can take as little as 1 to 2 weeks
- **Heavy soils:** lose 15 to 50 lbs of nitrate nitrogen per year
- **Sandy soils:** each inch of rain moves nitrate nitrogen approximately 1 ft.

[1]Illinois NREC / Corteva Agriscience 2015 Trial data

[2]Data is based on average yield advantage of N-Serve® nitrogen stabilizer application compared to unstabilized acres in Corteva Agriscience/Dow Agrosciences field trials in 2008-2021. Product performance is variable and depends on a variety of factors including but not limited to weather conditions, soil factors and manner of use or application. Individual results may vary.

N-Serve®

Optinyte™ technology

NITROGEN STABILIZER

Bulk Tank Maintenance

Equipment Tips

Bulk Tank

- Store N-Serve® nitrogen stabilizer above 28° F, if possible to avoid crystallization.
- N-Serve in pumps and lines will freeze before material in tanks.
- Use externally applied steam or hot water is recommended to open plugged piping but never heat the liquid higher than the product flash point (104°).
- Annually replace the desiccant bags in your bulk tank's air dryer to avoid corrosion over time.

Minibulk Tanks

1. Check for worn or leaking hoses.
2. If needed, install new nylon-core hoses that meet SAE 100R7 or SAE J51 Type C standards.
3. Tanks filled with product that have been in storage longer than 30 days need to be recirculated before use.

Recommended Procedures:

1. Turn the volume of the tank once a month when above 40° F
2. Prior to receiving a new shipment or filling mini bulk tanks, circulate product in the bulk tank to turn volume 5 times.

Recirculation Procedures

Store N-Serve® nitrogen stabilizer above 28° F, if possible. The active ingredient in N-Serve may start to crystallize from solution when the temperature drops to 28° F. Crystals may also form in piping or leaking threads ifw the solvent is allowed to evaporate. The best way to avoid major build-up of crystals over long periods is to have clean, well maintained equipment and dissolve them completely if and when they occur.

Crystals can be dissolved by warming and circulating the product. Results will be faster if warmer product is added prior to or during the circulation process. Externally applied steam or hot water may be useful for opening plugged piping, but use caution not to overheat the lines. Never heat the liquid higher than the product flash point (104°F), or flammable vapors may exist. Extended circulation time will allow the bulk pump to heat the fluid slightly.

Rate Guide											
N Units/Tank	Rates for 1000 Gallon Tank 3600										
N Rate	100	110	120	130	140	150	160	170	180	190	200
Gallons/Tank	9.0	8.2	7.5	6.9	6.4	6.0	5.6	5.3	5.0	4.7	4.5
Acres/Tank	36.0	32.7	30.0	27.7	25.7	24.0	22.5	21.2	20.0	18.9	18.0
N Units/Tank	Rates for 1250 Gallon Tank 4320										
N Rate	100	110	120	130	140	150	160	170	180	190	200
Gallons/Tank	11.3	10.2	9.4	8.7	8.0	7.5	7.0	6.6	6.3	5.9	5.6
Acres/Tank	45.0	40.9	37.5	34.6	32.1	30.0	28.1	26.5	25.0	23.7	22.5
N Units/Tank	Rates for 1500 Gallon Tank 5400										
N Rate	100	110	120	130	140	150	160	170	180	190	200
Gallons/Tank	13.5	12.3	11.3	10.4	9.6	9.0	8.4	7.9	7.5	7.1	6.8
Acres/Tank	54.0	49.1	45.0	41.5	38.6	36.0	33.8	31.8	30.0	28.4	27.0

Ask your local Corteva Territory Manager for a personalized rate guide that fits your operation's needs.

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NITROGEN STABILIZER

Preparing Pumps

Take The Following Steps A Few Weeks Before Application:

1. **Flush the system:** Periodic flushing with kerosene keeps your pump running at its best.
2. **Check fittings and seals:** If you find any loose fittings or leaks, tighten or replace as needed.
3. **Check hoses:** Replace worn or leaking hoses with nylon-core hoses that meet SAE 100R7 or SEA J51 Type C standards.
4. **Check the relief valve setting:** It should pump up to and relieve at 200 to 225 psi.
5. **Check the filter screen:** A clogged strainer basket is the most common problem with pumps that aren't pumping correct volume.
6. **Check power and tank vent:** Any blockage in the vent line can affect pump performance.
7. **Calibrate the system:** Proper calibration ensures you're dispensing the proper amount.
8. **Fill pump with N-Serve® nitrogen stabilizer:** Keep your pump full throughout the application season. Never let the pump dry out.

Economy Controls
800-350-9797
www.econotrol.com

FarmChem
800-247-1854
www.farmchem.com

N-Serve®

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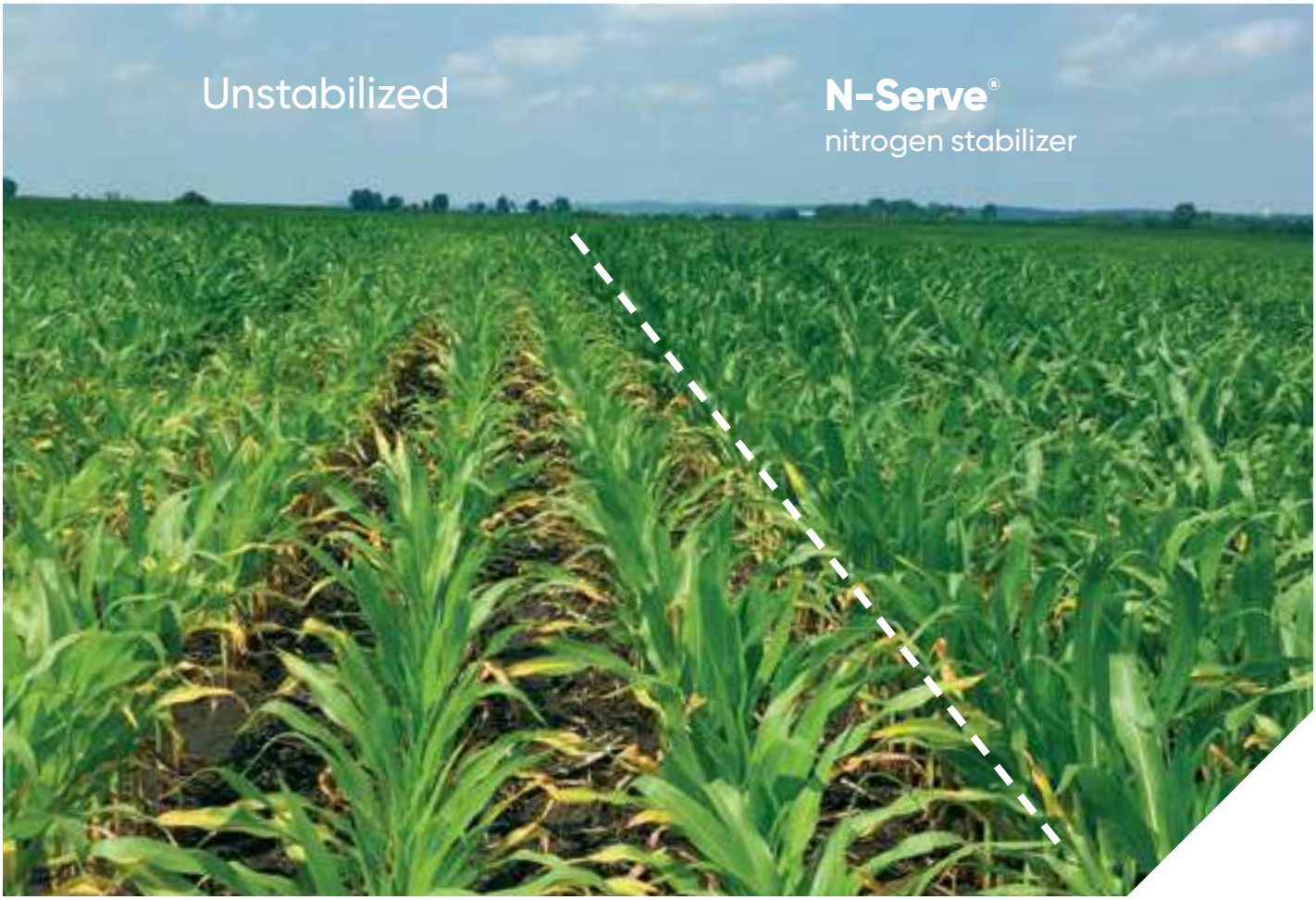
NITROGEN STABILIZER



Spring Applied: Apr. 14
185 units NH3 vs 180 units NH3 + N-Serve 1qt
25 units UAN applied PRE on everything

Corn On Corn
22 inches of rain fell in May through June

Spring applied: 200 units NH3 + N-Serve 1qt

N-Serve 1qt

N-Serve®

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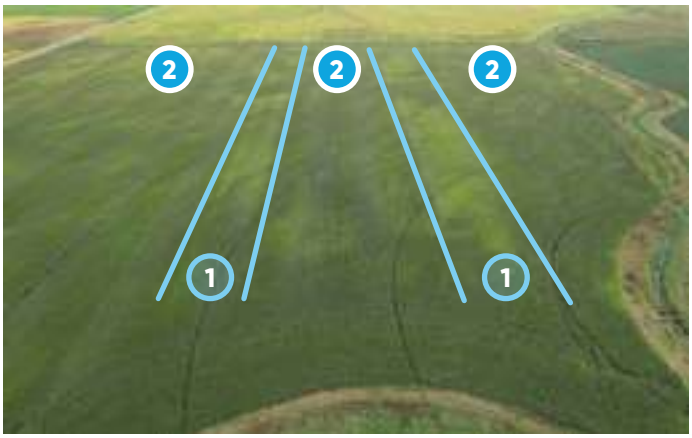
NITROGEN STABILIZER

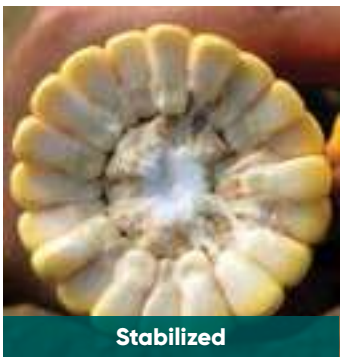
Field Trials

Anhydrous Ammonia Fall Applied | Near Hancock, MN | Photos: Aug. 2024



1	**NH_3** (Only)	*130 units*	3	**N-Serve +NH_3**	*32 oz 100 units*
2	**N-Serve®** nitrogen stabilizer **+NH_3**	*32 oz 130 units*	4	**N-Serve +NH_3**	*32 oz 160 units*

Spring Applied

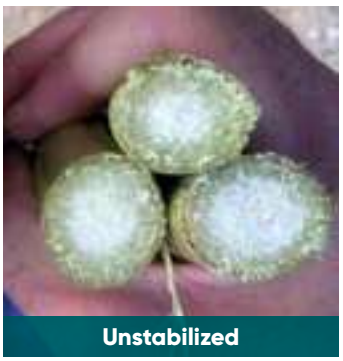


Stabilized

Unstabilized

N-Serve *32 oz*

Stabilized



Unstabilized

N-Serve *32 oz*
+NH_3 *200 units*

CORTEVA™ agriscience

The Right Amount Of Nitrogen Is Important

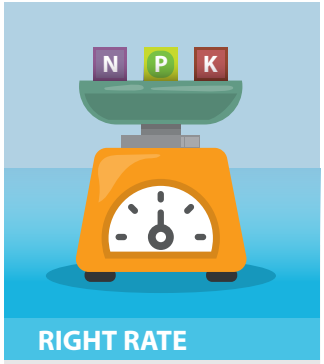
nutrient stewardship PARTNER

Factors Affecting Nitrogen Management

- Nitrogen economics constantly change
- Farmer application practices are evolving:
  - » Split applications
  - » Forms of nitrogen used
- Environmental influences
- Nutrient regulations
- Nutrient reduction strategies
- University recommendations are evolving
- New technology with nitrogen fixating biologicals
- 4R Nutrient Stewardship

RIGHT SOURCE

Match fertilizer type to crop needs



RIGHT RATE

Match the amount of fertilizer to crop needs

RIGHT TIME

Make nutrients available when the crop needs them

RIGHT PLACE

Keep nutrients where crops can use them

N-WATCH

Available Nitrogen	N-Serve 0–12″	Unstabilized 0–12″
Nitrate ppm	22	27
Ammonium ppm	15	4
N as nitrate:	59%	87%
N as ammonium:	**41%**	**13%**

Application: 100 lbs. Anhydrous Ammonia + 35 lbs. DAP
Application Date: March 30, 2015
Sample Date: May 19, 2015

N-Serve 0–12″	Unstabilized 0–12″
28	38
24	6
54%	86%
46%	**14%**

Application: 180 lbs. Anhydrous Ammonia
Application Date: April 1, 2015
Sample Date: May 15, 2015

N-Serve 0–12″	Unstabilized 0–12″
22	25
25	3
47%	90%
53%	**10%**

Application: 140 lbs. Anhydrous Ammonia + 45 lbs. 28% UAN
Application Date: April 3, 2015
Sample Date: May 26, 2015

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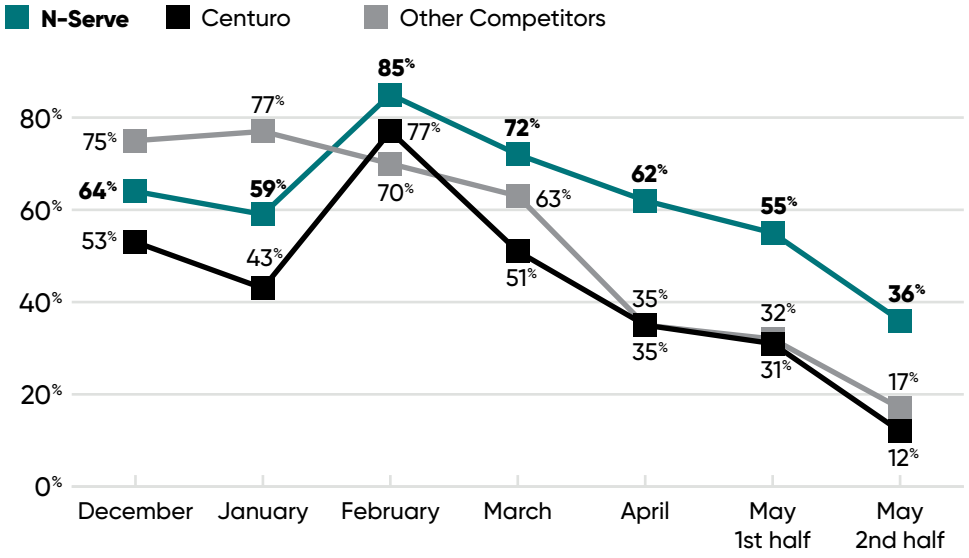
2023 - 24 Fall N-Serve Trials | N(%) as Ammonium

Average Fall Trial Soil Data* | 10 sites



Fall Average Yield Results

(15 fall applied trials)

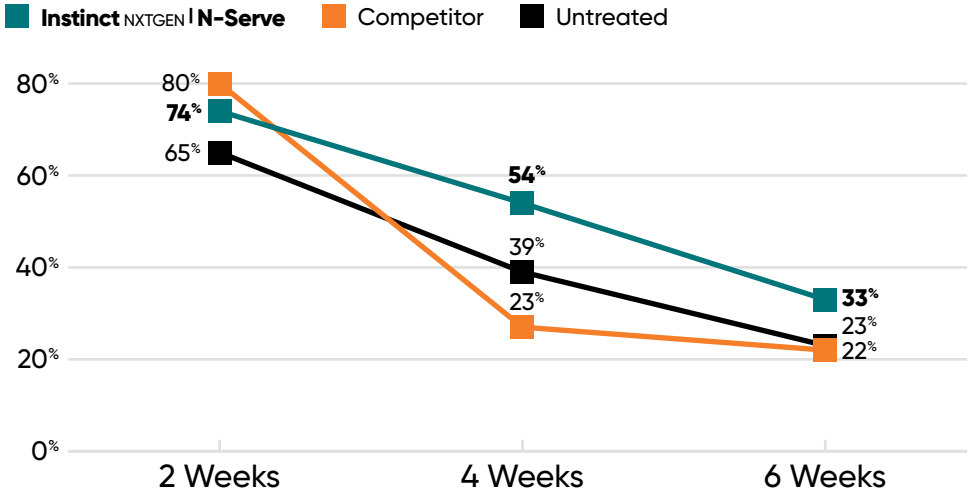
Entry	Yield (bu/A)
N-Serve	**266**
Competitor	262
Untreated	256

An average of 36% of Nitrogen was still available in the ammonium form in the second half of May in soils where fall-applied N was stabilized with N-Serve.

+$16/A** | **+4 bu/A**

Over Competitors

2024 Spring Trials | N(%) as Ammonium



Spring Average Yield Results

(18 spring applied trials)

Entry	Yield (bu/A)
Instinct NXTGEN **N-Serve**	**225**
Untreated	217

At 6 weeks, Nitrapyrin was able hold Nitrogen in the ammonium form 11% better than the competition/ untreated in 12 different trials.

+$32/A** | **+8 bu/A**

Over Untreated Acres

*Samples depicted in data above were taken across 10 sites across Iowa and Illinois. Each dot represents the average across the 10 sites. The Nitrogen and Nitrogen Stabilizer applications occurred in Fall 2023 prior to samples beginning to be taken.

**Based on $4.00/bu corn prices.

Instinct NXTGEN®

Optinyte™ technology

NITROGEN STABILIZER

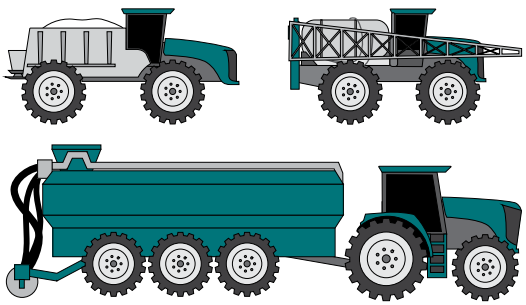
Active ingredient(s): Nitrapyrin (Optinyte® technology)
Mode of action: AMO enzyme inhibitor
Formulation type: ME
Package size(s): 2x2.5, 250 gal & Bulk
Bulk Density: 9.930 lb/gal

Features

- Water-based capsule and mixes well with UAN fertilizer solutions
- Optimizes yield potential when used with liquid nitrogen, urea or liquid manure
- Encapsulated nitrogen stabilizer makes it surface stable
- Compatible with most herbicides and insecticides
- Must be incorporated within 10 days by either 0.5" of rain/irrigation or mechanical incorporation

Benefits:

- Easy to handle and noncorrosive
- Reduces leaching of nitrates, denitrification, and greenhouse gas emissions
- Maximizes yield and profit potential
- Keeps nitrogen in the ammonium form longer, keeping nitrates out of waterways[1]
- Improves standability by reducing risk of stalk rot



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Corn Recommendation(s):

Fall Application:

Instinct NXTGEN® nitrogen stabilizer — ***24-48 oz***

(With manure; rates vary depending on application timing and soil temperature)

- **+8 Bu/A** on average on fall stabilized acres compared to unstabilized acres[2]
- Heavy spring rains lead to heavy leaching and denitrification when nitrogen is not stabilized, Instinct NXTGEN protects against both
- Fall applications reduce the potential for soil compaction associated with spring pre-plant applications
- Growers and fertilizer dealers can spread some of their spring workload to fall. This allows growers to complete planting in a timely manner, reducing yield loss from late planting

Spring Pre-Application:

Instinct NXTGEN — ***24 oz***

(Preplant, at plant, row or band injection; preplant or at plant broadcast)

- **+7 Bu/A** on average on spring stabilized acres compared to unstabilized acres[2]
- Instinct NXTGEN protects from nitrogen loss from heavy spring rains and keeps it available for the second half of the growing season
- Instinct NXTGEN protects nitrogen in the soil during key growth stages of corn. It works underground, where up to 70% of Nitrogen loss is from leaching and denitrification
- 10% of Nitrogen can be lost in three days of saturated soils from denitrification and 10% lost each additional day that soils are saturated (i.e., 20% loss in 4 days of saturated soils)

Postemergence (Sidedress) Application:

Instinct NXTGEN — ***12-24 oz***

- **+5 Bu/A** on average on sidedress stabilized acres compared to unstabilized acres[2]
- Approximately 37% of corn's total nitrogen needs still occur after tassel
- Nitrogen application occurs closer to plant uptake to minimize N loss
- Ammonium is still rapidly converting to nitrate form – the entire conversion process can take as little as 1 to 2 weeks
- **Heavy soils:** lose 15 to 50 lbs of nitrate nitrogen per year
- **Sandy soils:** each inch of rain moves nitrate nitrogen approximately 1 ft.

[1]Illinois NREC / Corteva Agriscience 2015 Trial data

[2]Data is based on average yield advantage of N-Serve® nitrogen stabilizer application compared to unstabilized acres in Corteva Agriscience/Dow Agrosciences field trials in 2008-2021. Product performance is variable and depends on a variety of factors including but not limited to weather conditions, soil factors and manner of use or application. Individual results may vary.

Instinct NXTGEN®

Optinyte™ technology

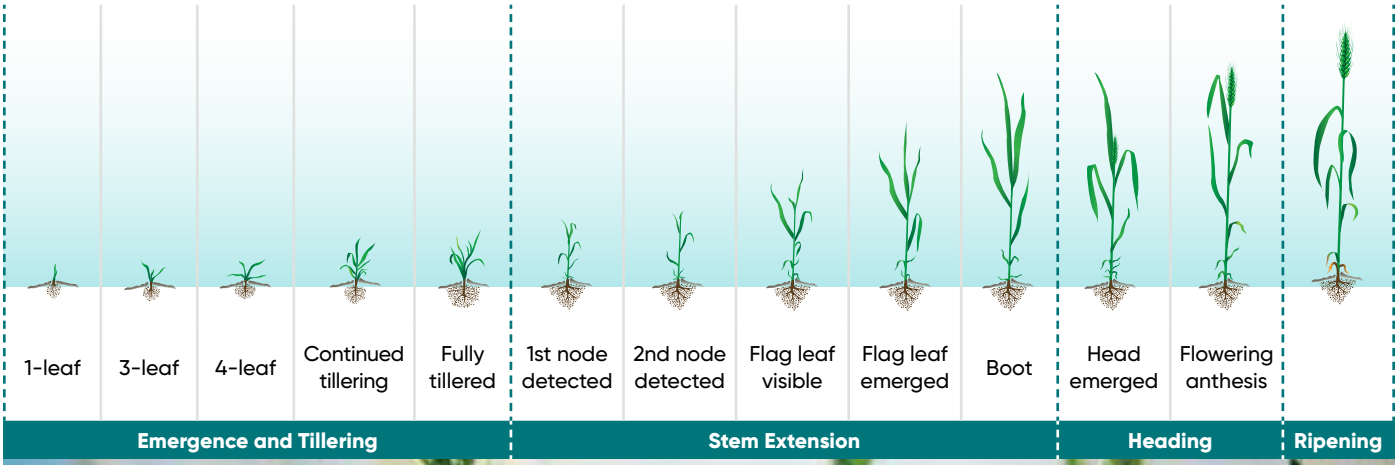
NITROGEN STABILIZER

Wheat Recommendation(s):

Application:

Instinct NXTGEN® nitrogen stabilizer — ***24 oz***

- Apply anytime prior to 1st node detected/jointing
- Can be tank mixed with other pesticides, nutrients or adjuvants
- Tank mix with UAN or impregnate onto dry urea
- Balanced source of ammonium and nitrate



Instinct NXTGEN®

Optinyte™ technology

NITROGEN STABILIZER

Equipment Best Practices

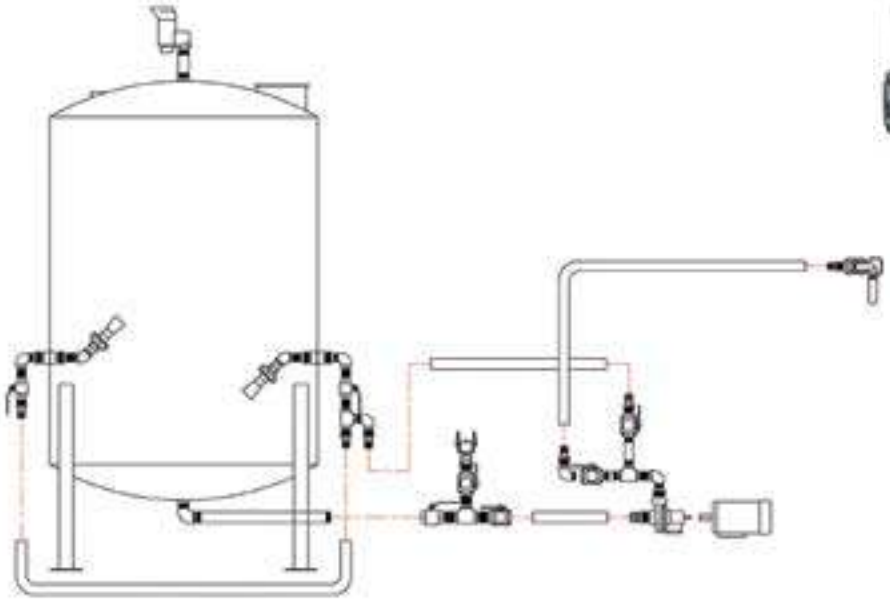
Bulk Equipment Requirements

- 304 Stainless Steel Tank
- Single eductor/recirculation minimum, dual eductor/ recirculation recommended
- Scot Pressure seal pump required
- ~23°F is the freeze point
- Viton Seals in pumps
- 304 stainless piping

Tote Equipment Requirements

- Totes should be mixed prior to season usage
- Flush tote pumps and meters with warm water and winterize with RV antifreeze

Tote



Tote Mixer

Scot Pressure seal pump

Instinct NXTGEN®

Optinyte™ technology

NITROGEN STABILIZER

Impregnation Tips When Blending With A Dry Fertilizer

General Impregnation Procedure (Steps)

1. Add dry fertilizer, (N, P, K, drying agents) components to the blender. If adding Instinct NXTGEN® nitrogen stabilizer while filling the blender, it is recommended that at least 50% of the fertilizer is in the blender before adding Instinct NXTGEN.
2. **Pressurized container:** Close all valves and add the required amount of Instinct NXTGEN to the impregnation container. Close the lid on the container. With the discharge valve closed, pressurize the container. 30 psi is a good initial operating pressure.
   Automated systems: Make sure all lines are tight and sealed. If air is allowed to leak from the system, the transfer of the Instinct NXTGEN to the tower blender may be slowed down. Increased air pressure from a larger compressor will assist in compensating for air loss.
3. With the fertilizer blender running, open the discharge valve on the pressurized container to add Instinct NXTGEN to the fertilizer mixer. The spray time for the Instinct NXTGEN should be no less than 30 seconds and no longer than 3 minutes.
4. If a drying agent is required, it is recommended to be added to the fertilizer just prior to or during the addition of Instinct NXTGEN. Too early can result in most of the drying agent remaining at the bottom of the blender. Additional drying agent can be added to help improve flowing and spreading properties.
5. Allow the final blend to mix for at least three minutes before discharging the batch from the mixer. It is a good practice to check the first batch of impregnated fertilizer for flowability before discharging the entire batch from the mixer. This will provide an opportunity to adjust the amount of drying agent if necessary.

Is A Drying Agent Needed?

A drying agent is recommended when Instinct NXTGEN® nitrogen stabilizer is being applied on 250 pounds/acre or less of fertilizer. This is a general recommendation and is subject to external factors including relative humidity, moisture level of the urea, fertilizer blend and addition of other products. As the rate per acre of fertilizer increases, the need for drying agent decreases.

What Amount Of Drying Agent Is Needed?

The amount of drying agent required is dependent on the above factors. A good starting point for the quantity oft drying agent is to use 1 pound of drying agent per 1 pint or 16 ounces of Instinct NXTGEN added to the fertilizer. Based on the properties of this blend, the amount of drying agent may be increased or decreased to achieve the desired results.

Can I Store These Blends?

Storage of fertilizer that has been impregnated with Instinct NXTGEN is not recommended. While holding impregnated batches of fertilizer for up to 24 hours due to equipment failures or weather is acceptable, impregnated batches of fertilizer should be spread as quickly as possible to ensure flowability of the mixture.

Cleaning The Lines?

The spray lines and vessels should be cleaned if no additional batches of Instinct NXTGEN impregnated fertilizer are planned for the same day and periodically throughout the use period. Cleaning can be done by rinsing the walls of the vessel with 2 quarts of warm tap water or UAN or chasing with a Preemerge herbicide.

TIP: Keep a coffee pot nearby which makes the right amount of hot water for rinsing the lines.

CORTEVA™ agriscience

Drying Agents

Drying agents are materials that are used to improve the flow properties of dry blend fertilizers. Depending of the time of year, weather conditions, amount and type of components in the fertilizer blend and the current condition of the components, drying agents may be required to improve the flow properties of even non-impregnated fertilizers to allow application.

Common drying agents include materials such as AG-79 from EP Minerals, Hi-Sil, from PPG, RVM or LVM clay granules from Agsorb, corn cob grits, pelletized or limestone granules. The sorptive types of dryers such as the Hi-Sil, MP-79, corn cob grits, clay and pelletized limestone work by soaking up the excess liquid from the surface of the coated fertilizer allowing it to be more free flowing. Materials like limestone granules work by providing more surface area for the Instinct NXTGEN to coat, resulting in a lighter coating on the granules which have a lower liquid content and flow more readily.

Impregnating Tips And Tricks For Better Applications (Instinct NXTGEN® Nitrogen Stabilizer + Urea)

- Smaller openings such as airflow tubes appear to be more impacted/easily plugged verses a spinner spreader.
  - » It is recommended that applicators need to plan to wash their equipment on a regular basis. Any downtime such as while waiting for tender trucks, etc. are good opportunities to inspect and clean equipment.
  - » It is helpful to add a mini-wash system to application machines to help prevent buildup during the application season.
- When investigating plugged applicator equipment, obtain a copy of the applicator record. This record should include:
  - » Total pounds of the blend
  - » Other liquid or dry components in the batch
  - » Amount of drying agent
  - » Batch size
  - » Acres treated, etc.
- Be aware that fertilizer quality will affect the flowability of Instinct NXTGEN.
  - » Dusty bulk fertilizers will cause more plugging issues.
  - » Adding products like elemental sulfur or bulk zinc that contains very fine particles can create a paste when combined with liquids. This paste can accumulate on spinners and deflectors.
  - » The amount of waxy coating on urea can have an effect on how much Instinct NXTGEN can be absorbed.
  - » Water based products should always be added prior to oil based products.
  - » Adding as little as 50 lbs of potash helps to keep equipment clean during application.
- Increase blending time at the fertilizer plant to allow more even coating of the entire blend. Batches treated with Instinct NXTGEN should be blended for a minimum of 10 minutes. The minimum time can be reduced with small batches.
- Use a tote mixer to mix the Instinct NXTGEN prior to use.
- Humid weather alone can greatly affect the flow of urea and could potentially cause the urea to bridge up in tender trucks or application machines.
- The use of drying agent cannot be over emphasized. Diatomaceous earth is recognized as a high quality drying agent because of its increased surface area. Begin with a higher rate of drying agent and reduce the amount as the dryness of the batch improves or weather conditions are less humid, etc.
  - » Begin with 1 pound drying agent per 1 pint or 16 ounces Instinct NXTGEN.
- Mix the blends in smaller batches to allow more room for tumbling in the blender. Filling the blender to 85% capacity allows better tumbling/mixing action.

Mixing & Handling Best Management Practices

Mix Instinct NXTGEN Prior To Use In Season

This provides a consistent viscosity and improves pumping and metering.

Mixing With UAN

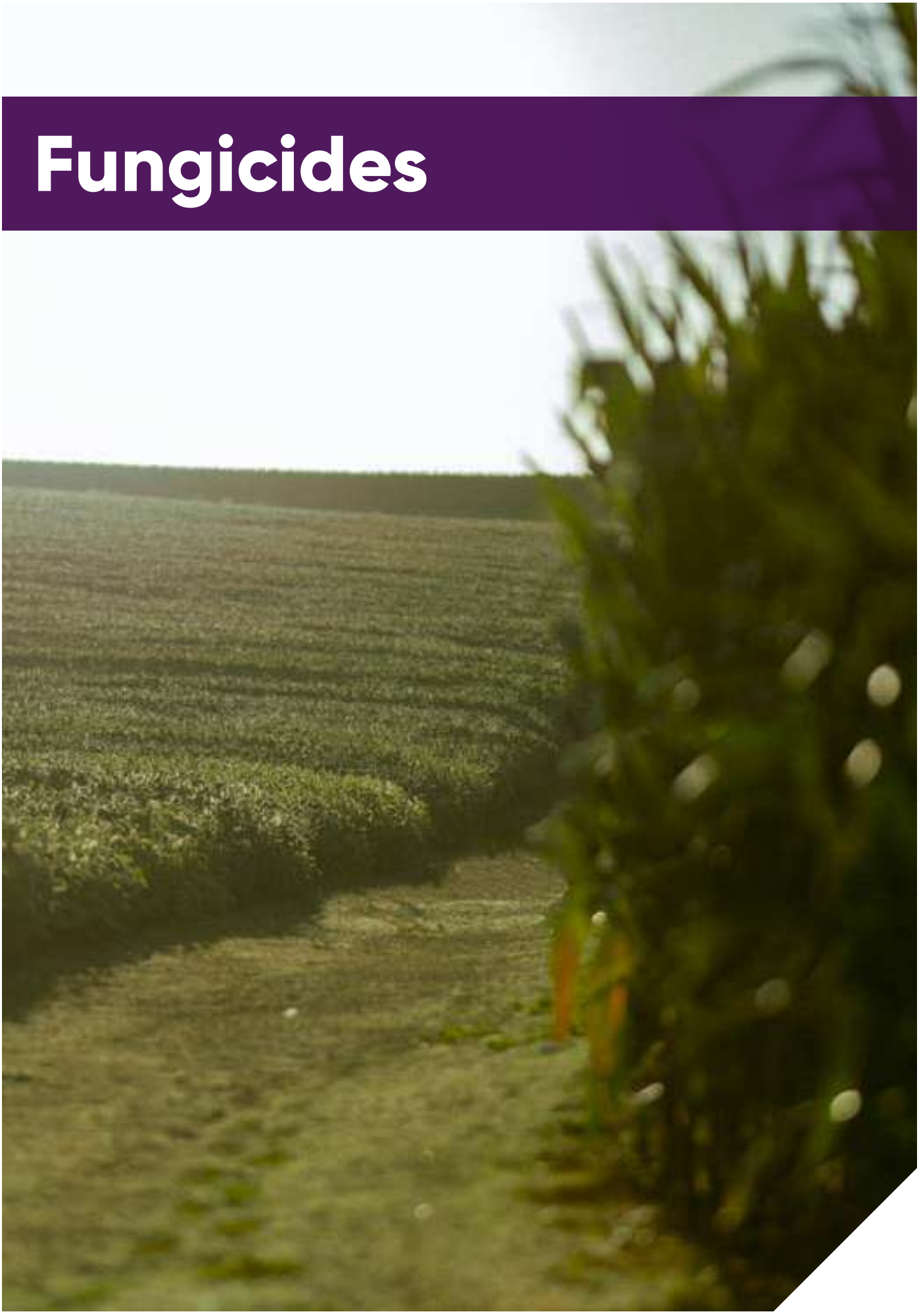
- Be sure to add all components independently of each other. Follow recommended mixing order found in Resources.

For more information on Nitrogen Stabilizers, please contact your local Corteva Agriscience territory manager, call **800-258-3033.**

Notes:

Notes:

Fungicides



Aproach®

Onmira™ active

FUNGICIDE

Active Ingredient(s): picoxystrobin
Site of Action: Group 11
Formulation Type: SC
Package Size(s): 2x2.5s
Rainfast: 1 hour

Features & Benefits

- Provides more complete coverage because it is rapidly absorbed and moves quickly into and within each plant. This helps compensate for less-than-ideal timing, since weather and other crop demands can make it difficult to perfectly plan fungicide applications.
- Demonstrates the unique ability to redistribute within the crop canopy, increasing protection deeper into the crop canopy, closer to the soil surface where key diseases originate.
- Provides control of and protection against yield-robbing diseases in corn, including anthracnose, rusts and leaf blights.
- Protects against key diseases in corn, cereal grains and soybeans including gray leaf spot, septoria brown spot and rust.

Recommendation(s):

Corn Program

Diseases Controlled

Anthracnose leaf blight	Leaf spots	Rust, *common, southern*
Anthracnose stalk rot	Northern corn leaf blight	Southern corn leaf blight
Eye spot	Northern corn leaf spot	Yellow leaf blight
Gray leaf spot	Physoderma brown spot	

Rate	Treatment Instructions
3 - 6 fl oz	Make a single 3-6 fl oz application between V4 to V7 for early season disease control/suppression. On susceptible inbreds or hybrids, for early season disease control of Northern corn leaf spot, Northern corn leaf blight, Gray leaf spot, or Common Rust, use the 6 fl oz rate. For continued control through the season, a planned program should be followed.
6 – 12 fl oz	Make 6 to 12 fl oz applications at 7 to 14-day intervals. For best results apply between VT to R3 and make applications prior to disease development. Use the higher rate and shorter interval when disease pressure is high.

Minimum Pre-Harvest Interval (PHI): Grain or Ear: 7 days | Forage: 0 days

- Make no more than 2 sequential applications of Aproach® fungicide before switching to a fungicide with a different mode of action
- Do not tank mix Aproach with an adjuvant or crop oil when spraying corn between the V8 and VT stages of growth
- Do not exceed 36 fluid ounces per acre per crop

Soybean Program

Diseases Controlled

Aerial web blight	Cercospora, *blight, leaf spot*	Pod and stem blight
Anthracnose	Purple seed stain	Powdery mildew
Alternaria leaf spot	Downy mildew	Rust
Brown Spot	Frogeye leafspot	Target Spot

Rate	Treatment Instructions
6 – 12 fl oz	Begin applications prior to disease development and make a second application on a 7 - 14 day interval depending on the targeted disease. Use higher rate and shorter interval when disease pressure is high.

Soybean program continued

Diseases Controlled

White mold

Rate	Treatment Instructions
8 – 9 fl oz	Make initial preventive application at 100% bloom (1 flower blooming on all plants) and follow with 2nd application 7 - 10 days later at full bloom.

Minimum Pre-Harvest Interval (PHI): Grain, forage and hay: 14 days

- Make no more than 2 sequential applications of Aproach before switching to a fungicide with a different mode of action
- Do not exceed 12 fluid ounces per acre per crop if grown for forage and hay
- Do not exceed 36 fluid ounces per acre per crop if grown for grain (seed)

Sorghum Program

Diseases Controlled

Alternaria spp	Grey leafspot
Anthracnose	Rust, *common*

Rate	Treatment Instructions
6 - 12 fl oz	Begin applications prior to disease development and make a second application on a 7 to 14-day interval, depending on the targeted disease. Make a third application only after having applied a fungicide with a different mode of action. Use the higher specified rate and shorter interval when disease pressure is high. Do not apply after flowering.

Minimum Pre-Harvest Interval (PHI): Forage: 7 days | Hay: 14 days

- Make no more than 2 sequential applications of Aproach® Fungicide before switching to a fungicide with a different mode of action.
- Do not apply more than 36 fluid ounces of Aproach® Fungicide or make more than 3 applications per year.
- Do not apply after flowering.

Key Diseases Controlled


Cercospora blight


Common rust


Downy mildew


Gray leaf spot


Northern corn leaf blight

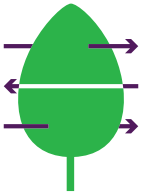

Septoria brown spot


Southern rust


White mold

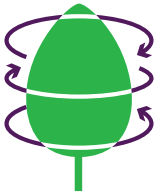
Four Movement Properties

quickly surround, penetrate and protect leaves and stems

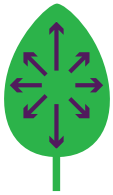


Translaminar Movement: Moves through the leaf surface to protect top and bottom of the leaf

Xylem Systemic Activity: Moves through plant tissues to distribute throughout the leaf



Surface Redistribution: Protective barrier moves over the leaf surface



Wax Diffusion Activity: More consistent coverage across leaf and stem surface

Aproach® Prima

Onmira™ active

FUNGICIDE

Active Ingredient(s): cyproconazole + picoxystrobin
Site of Action: Group 11 + Group 3
Formulation Type: SC
Package Size(s): 2x2.5s, 250 gal totes
Rainfast: 1 hour

Features & Benefits

- Rapid absorption into the plant with up to 2x faster uptake in plants than competing products
- Rainfast one hour after application
- Flexible application window
- Two modes of action provide long-lasting curative and preventative residual protection for extended disease control
- Protects plant health from yield-limiting diseases at a beneficial cost, providing greater value and ROI
- Improves green leaf area and chlorophyll production late into the season for stronger, more productive plants
- Tank-mix compatible with many commonly used herbicides, insecticides and biological control products for more efficient application

Recommendation(s):

Cereal Program (Wheat And Triticale Only)

Diseases Controlled		
Leaf and glume blotch	Powdery mildew	Tan spot

Rate	Treatment Instructions
3.4 fl oz	Apply early season for preventive disease control/suppression. One additional application may be made depending on disease and environmental conditions

Diseases Controlled		
Black point	Rusts	Tan spot
Leaf and glume blotch	Scab (*Suppression)*	
Powdery mildew	Spot blotch	

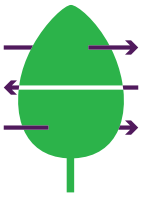
Rate	Treatment Instructions
3.4 - 6.8 fl oz	Begin applications prior to disease development. Use higher specified rate when disease pressure is high. To optimize yields in cereals, it is important to protect the flag leaf from foliar diseases. For optimizing yield and flag leaf disease control, apply Aproach Prima at Feeke's 9, 'flag leaf out'.

Minimum Pre-Harvest Interval (PHI): Grain: 45 days | Forage or hay: 21 days

- Apply no more than two sequential applications of a picoxystrobin containing product before switching to a fungicide with a different mode of action. The minimum re-treatment interval in cereals for Aproach Prima is 14 days.
- Do not exceed 6.8 fluid ounces product per acre per crop.
- When applied alone or in combination with other products containing picoxystrobin, do not apply more than 0.585 pounds of picoxystrobin active ingredient per acre per year to wheat and triticale.
- When applied alone or in combination with other products containing cyproconazole, do not apply more than 0.036 pounds of active ingredient cyproconazole per acre per year to wheat and triticale.

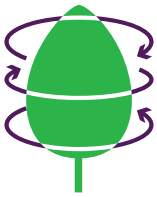
Four Movement Properties

quickly surround, penetrate and protect leaves and stems

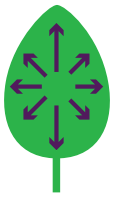


Translaminar Movement: Moves through the leaf surface to protect top and bottom of the leaf

Xylem Systemic Activity: Moves through plant tissues to distribute throughout the leaf



Surface Redistribution: Protective barrier moves over the leaf surface



Wax Diffusion Activity: More consistent coverage across leaf and stem surface

Corn Program (Field And Seed)

Diseases Controlled		
Anthracnose leaf blight	Leaf spots	Rust, *common, southern*
Anthracnose stalk rot	Northern corn leaf blight	Southern corn leaf blight
Eye spot	Northern corn leaf spot	Tar spot
Gray leaf spot	Physoderma brown spot	Yellow leaf blight

Rate	Treatment Instructions
3.4 fl oz	Apply early season for preventive disease control or suppression. One additional application may be made depending on disease and environmental conditions.
3.4 - 6.8 fl oz	Begin applications prior to disease development. Use higher rate and shorter interval when disease pressure is high.

Minimum Pre-Harvest Interval (PHI): Grain or ear: 30 days | Silage: 21 days

- Apply no more than two sequential applications of a picoxystrobin-containing product before switching to a fungicide with a different mode of action. The minimum retreatment interval in corn for Aproach® Prima fungicide is 7 days.
- Do not tank mix Aproach Prima with an adjuvant or crop oil when spraying corn between the V8 and VT stages of growth.
- Do not exceed 6.8 fluid ounces per crop.
- When applied alone or in combination with other products containing picoxystrobin, do not apply more than 0.585 pounds of picoxystrobin active ingredient per acre per year to corn.
- When applied alone or in combination with other products containing cyproconazole, do not apply more than 0.036 pounds of active ingredient cyproconazole per acre per year to corn.

Soybean Program

Diseases Controlled		
Aerial web blight	Cercospora , *blight, leaf spot*	Pod and stem blight
Anthracnose	Purple seed stain	Powdery mildew
Alternaria leaf spot	Downy mildew	Rust
Brown Spot	Frogeye leafspot	Target Spot

Rate	Treatment Instructions
5 - 6.8 fl oz	Begin applications prior to disease development and continue on a 14 to 28-day interval. Use higher specified rate and shorter interval when disease pressure is high.

Minimum Pre-Harvest Interval (PHI): Grain: 30 days | Forage and hay: 14 days

- Make no more than two sequential applications of a picoxystrobin containing product before switching to a fungicide with a different mode of action. The minimum re-treatment interval in soybeans for Aproach Prima is 14 days.
- Do not exceed 13.6 fluid ounces product per acre per crop.
- Do not use soybean forage or hay as livestock feed if making more than one application at 6.8 fluid ounces product per acre.
- When applied alone or in combination with other products containing picoxystrobin, do not apply more than 0.585 pounds of picoxystrobin active ingredient per acre per year to soybean. Do not apply more than 0.195 lb of picoxystrobin active ingredient per acre per year to soybean if forage or hay are fed to livestock.
- When applied alone or in combination with other products containing cyproconazole, do not apply more than 0.072 pounds of active ingredient cyproconazole per acre per year to soybean. Do not apply more than 0.036 pounds of cyproconazole active ingredient per acre per year to soybean if forage or hay are fed to livestock.

Key diseases controlled


Cercospora blight


Common rust


Frogeye leaf spot


Gray leaf spot


Northern corn leaf blight


Septoria brown spot


Southern rust


Target spot

Forcivo™

FUNGICIDE

Active Ingredient(s): Flutriafol + Azoxystrobin + Fluindapyr

Site of Action: Group 3 + Group 11 + Group 7

Formulation Type: SC

Package Size(s): 2x2.5s, 250 gal totes

Rainfast: N/A

Features & Benefits

- **3 powerful modes of action** with curative, preventative and systematic activity
- **Novel SDHI** to force control over multiple foliar diseases
- **Long-lasting residual activity** of up to 30 days
- **Delivers broad-spectrum disease management** against key foliar diseases including Southern rust, tar spot, frogeye leaf spot and more
- Bolsters plant health and yield potential
- **Labeled on key crops** including barley, corn (field, seed, sweet, popcorn), grain sorghum, soybeans, triticale and wheat (winter, spring)

Recommendation(s):

Cereal Program (wheat, triticale, barley)

Diseases Controlled

Net blotch	Septoria leaf blotch
Powdery mildew	Stagonospora, *leaf / glume blotch*
Rust, *leaf, stem, stripe*	Tan spot

Rate	Treatment Instructions
5 - 9 fl oz	• Apply preventatively or when conditions are favorable for disease development. • Repeat as necessary if conditions are favorable for disease development. • Apply lower rates in the early season. • Application of high rate at flag leaf ligule emergence protects the upper foliage during critical grain fill period.

Minimum Retreatment Interval (RTI): 10 days

Restricted Entry Interval (REI): 12 hrs

Pre-Harvest Interval (PHI): Straw or Grain: 30 days | Forage: 7 days | Hay: 14 days

Corn Program (field, field grown for seed, sweet, popcorn)

Diseases Controlled

Diplodia, *ear rot and stalk rot*	Leaf spot, *gray, northern corn*
Eyespot	Physoderma brown spot
Leaf blight, *anthracnose, northern corn, southern corn*	Rust, *common, southern*
	Tar spot

Rate	Treatment Instructions
7 - 9 fl oz	• Apply preventatively or when conditions are favorable for disease development. • Repeat as necessary if conditions are favorable for disease development. • Apply no later than growth stage R4 (early dough stage). • Use higher rates and shorter interval when disease pressure is severe.

Minimum Retreatment Interval (RTI): 10 days

Restricted Entry Interval (REI): 12 hrs | Detasselling corn grown for seed and hand harvesting sweet corn: 14 days

Pre-Harvest Interval (PHI): Stover and Grain: 30 days | Forage: 7 days Sweet Corn: 14 days

Grain Sorghum Program

Diseases controlled

Ergot	Leaf spot, *gray*
Leaf blight, *anthracnose*	Rust, *common*

Rate	Treatment Instructions
7 - 9 fl oz	• **In Ergot:** Make first application at, or just prior to, flowering. • Apply preventatively or when conditions are favorable for disease development. • Repeat as necessary if conditions are favorable for disease development. • Use higher rates and shorter interval when disease pressure is severe.

Minimum Retreatment Interval (RTI): 10 days

Restricted Entry Interval (REI): 12 hrs

Pre-Harvest Interval (PHI): Stover and Grain: 30 days | Forage: 7 days

Soybean Program

Diseases Controlled

Anthracnose	Powdery mildew
Cercospora, *leaf blight and purple seed stain*	Rust
Leaf spot, *frogeye*	Spot, *brown, target*
	White mold

Rate	Treatment Instructions
7 - 9 fl oz	• Apply preventatively or when conditions are favorable for disease development. • Repeat as necessary if conditions are favorable for disease development. • Use higher rate and shorter interval when disease pressure is severe. • Do not feed forage or hay to animals or permit animals to graze.

Minimum Retreatment Interval (RTI): 14 days

Restricted Entry Interval (REI): 12 hrs

Pre-Harvest Interval (PHI): Seed: 21 days

Key Diseases Controlled


Anthracnose


Cercospora leaf blight


Common rust


Frogeye Leaf Spot


Gray leaf spot


Northern corn leaf blight


Southern rust


Stripe rust


Tar spot


Target spot

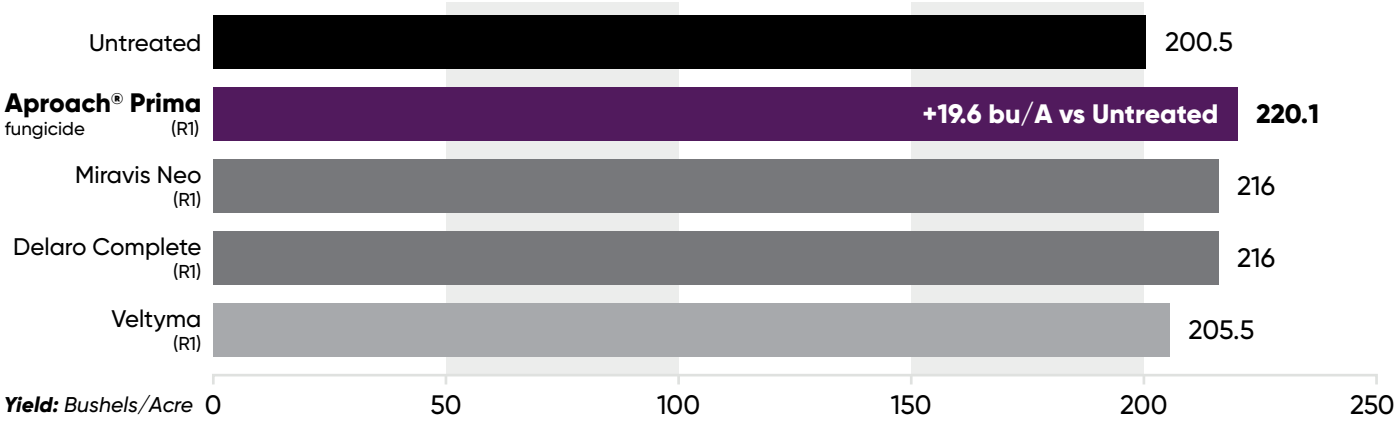
Aproach® Prima

Onmira™ active

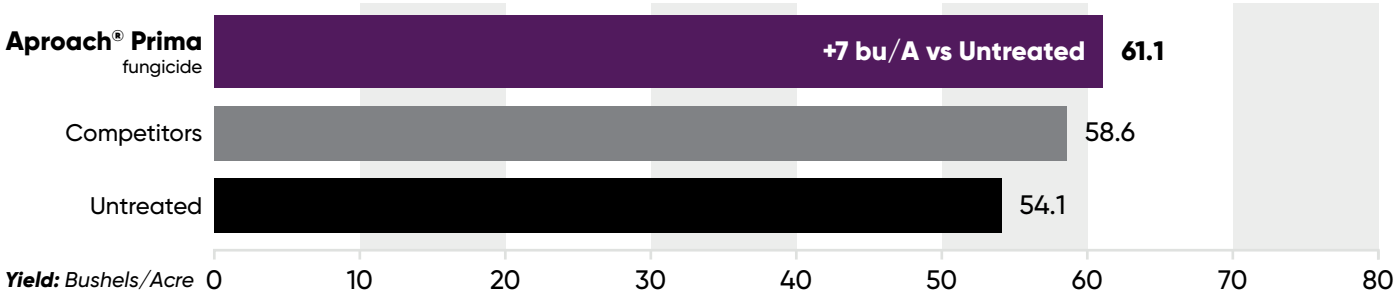
FUNGICIDE

Fungicide Trial Results

Fungicide Treatment Effects On Corn Yield | 2022 Purdue University study



Fungicide Treatment Effects On Soybean Yield | 2019 - 2022 University trials | Timing: R3-R4



Notes:

Aproach®
Onmira™ active

FUNGICIDE

Aproach® Prima
Onmira™ active

FUNGICIDE

Fungicide Attributes & Control Ratings – Corn

Fungicide (Common and trade names)	Company	Active Ingredients	FRAC Group	Rainfast	Corn Rates (fl oz/A)	Corn Diseases							
						Anthracnose Leaf Blight	Common Rust	Eyespot	Grey Leaf Spot	Northern Leaf Blight	Southern Rust	Tar Spot	Harvest Restrictions (Days)
Aproach®	Corteva Agriscience	Picoxystrobin	11	1 hr	3 – 12	●	◕	●	◔	●	●	●	7
Aproach® Prima	Corteva Agriscience	Picoxystrobin Cyproconazole	11 3	1 hr	3.4 – 6.8	○	○	○	●	●	●	◕	30
Priaxor	BASF	Fluxapyroxad Pyraclostrobin	7 11	NA	4 – 8	○	●	○	●	◕	●	○	21
Headline AMP	BASF	Pyraclostrobin Metconazole	11 3	NA	10 – 14.4	○	●	●	●	●	●	◕	20
Revytek	BASF	Mefentrifluconazole Fluxapyroxad Pyraclostrobin	3 7 11	NA	8 – 15	○	○	○	◕	◕	●	●	21
Veltyma	BASF	Mefentrifluconazole Pyraclostrobin	3 11	When Dry	7 – 10	○	○	○	◕	◕	●	●	21
Stratego YLD	Bayer	Prothioconazole Trifloxystrobin	3 11	NA	2 – 5	●	●	●	●	●	●	◯	14
Delaro	Bayer	Prothioconazole Trifloxystrobin	3 11	NA	8 – 12	●	●	●	●	●	◕	◕	14
Delaro Complete	Bayer	Prothioconazole Fluopyram Trifloxystrobin	3 7 11	2 hrs	4 – 12	○	○	○	●	◕	◕	●	14
Lucento	FMC	Bixafen Flutriafol	7 3	NA	3 – 5.5	○	○	○	◕	●	◕	●	30
Quilt XCEL	Syngenta	Propiconazole Azoxystrobin	3 11	NA	10.5 – 14	●	◕	◕	●	●	●	○	30
Trivapro	Syngenta	Propiconazole Benzovindiflupyr Azoxystrobin	3 7 11	NA	13.7	○	○	○	●	●	●	◕	30
Miravis Neo	Syngenta	Propiconazole Pydiflumetofen Azoxystrobin	3 7 11	NA	13.7	○	○	○	●	◕	●	◕	30

● Excellent ● Very Good ● Good ● Fair ● Poor ○ Unknown ◯ Not labeled

Rating Sources: Corteva Agriscience Crop Protection Trials; Fungicide Efficacy for Control of Corn and Soybean Foliar Diseases, Crop Protection Network – 2024 ratings.

Fungicide Attributes & Control Ratings – Soybean

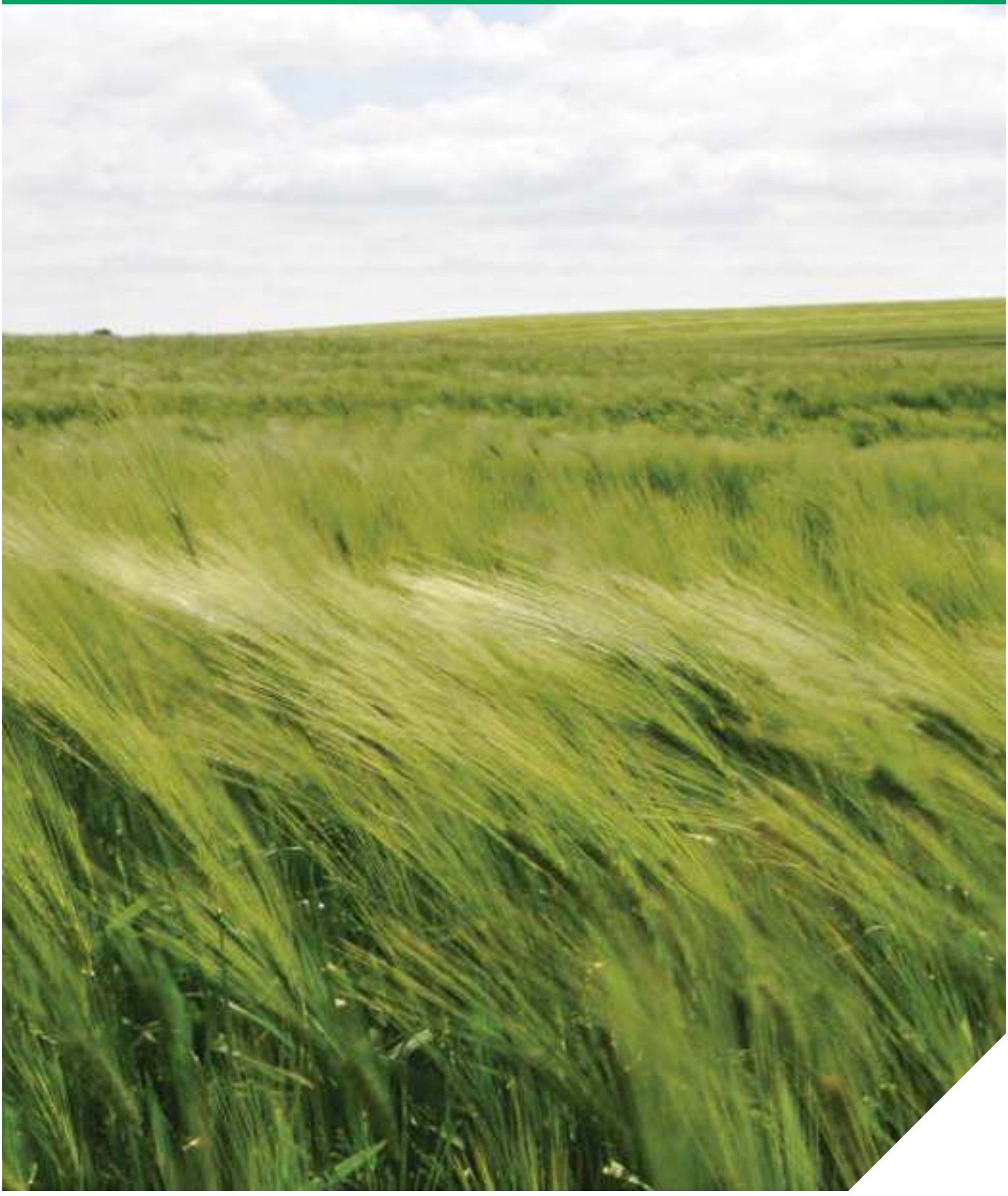
Fungicide (Common and trade names)	Company	Active Ingredients	FRAC Group	Rainfast	Soybean Rates (fl oz/A)	Soybean Diseases: Aerial Web Blight	Brown Spot	Cercospora Leaf Blight	Frogeye Leaf Spot	Soybean Rust	Target Spot	White Mold	Harvest Restrictions (Days)
Aproach®	Corteva Agriscience	Picoxystrobin	11	1 hr	6 – 12	Good	Very Good	Poor	Poor	Good	Unknown	Good	14
Aproach® Prima	Corteva Agriscience	Picoxystrobin Cyproconazole	11 3	1 hr	5 – 6.8	Good	Good	Very Good	Very Good	Very Good	Very Good	Not labeled	30
Endura	BASF	Boscalid	7	NA	3.5 – 11	Not labeled	Not labeled	Unknown	Poor	Not labeled	Not labeled	Very Good	21
Priaxor	BASF	Fluxapyroxad Pyraclostrobin	7 11	NA	4 – 8	Not labeled	Very Good	Very Good	Very Good	Very Good	Very Good	Poor	21
Revytek	BASF	Mefentrifluconazole Fluxapyroxad Pyraclostrobin	3 7 11	NA	8 – 15	Good	Good	Very Good	Very Good	Very Good	Very Good	Poor	21
Veltyma	BASF	Mefentrifluconazole Pyraclostrobin	3 11	When Dry	7 – 10	Unknown	Unknown	Unknown	Very Good	Unknown	Not labeled	Not labeled	21
Stratego YLD	Bayer	Prothioconazole Trifloxystrobin	3 11	NA	4 – 4.65	Good	Good	Fair	Very Good	Good	Poor	Not labeled	21
Delaro	Bayer	Prothioconazole Trifloxystrobin	3 11	NA	8 – 11	Good	Good	Unknown	Very Good	Unknown	Not labeled	Fair	21
Delaro Complete	Bayer	Prothioconazole Fluopyram Trifloxystrobin	3 7 11	2 hrs	8 – 11	Unknown	Good	Unknown	Very Good	Unknown	Not labeled	Fair	21
Lucento	FMC	Bixafen Flutriafol	7 3	NA	3 – 5.5	Unknown	Good	Very Good	Very Good	Very Good	Very Good	Unknown	21
Quilt XCEL	Syngenta	Propiconazole Azoxystrobin	3 11	NA	10.5 – 21	Excellent	Good	Fair	Fair	Good	Not labeled	Not labeled	R6
Miravis Top	Syngenta	Difenoconazole Pydiflumetofen	3 7	NA	13.7	Good	Good	Very Good	Very Good	Not labeled	Very Good	Unknown	14
Trivapro	Syngenta	Propiconazole Benzovindiflupyr Azoxystrobin	3 7 11	NA	13.7 – 20.7	Excellent	Very Good	Poor	Very Good	Very Good	Unknown	Not labeled	14
Miravis Neo	Syngenta	Propiconazole Pydiflumetofen Azoxystrobin	3 7 11	NA	13.7 – 20.8	Unknown	Unknown	Unknown	Very Good	Unknown	Unknown	Poor	14

Excellent · Very Good · Good · Fair · Poor · Unknown · Not labeled

Rating Sources: Corteva Agriscience Crop Protection Trials; Fungicide Efficacy for Control of Corn and Soybean Foliar Diseases, Crop Protection Network – 2024 ratings.

Notes:

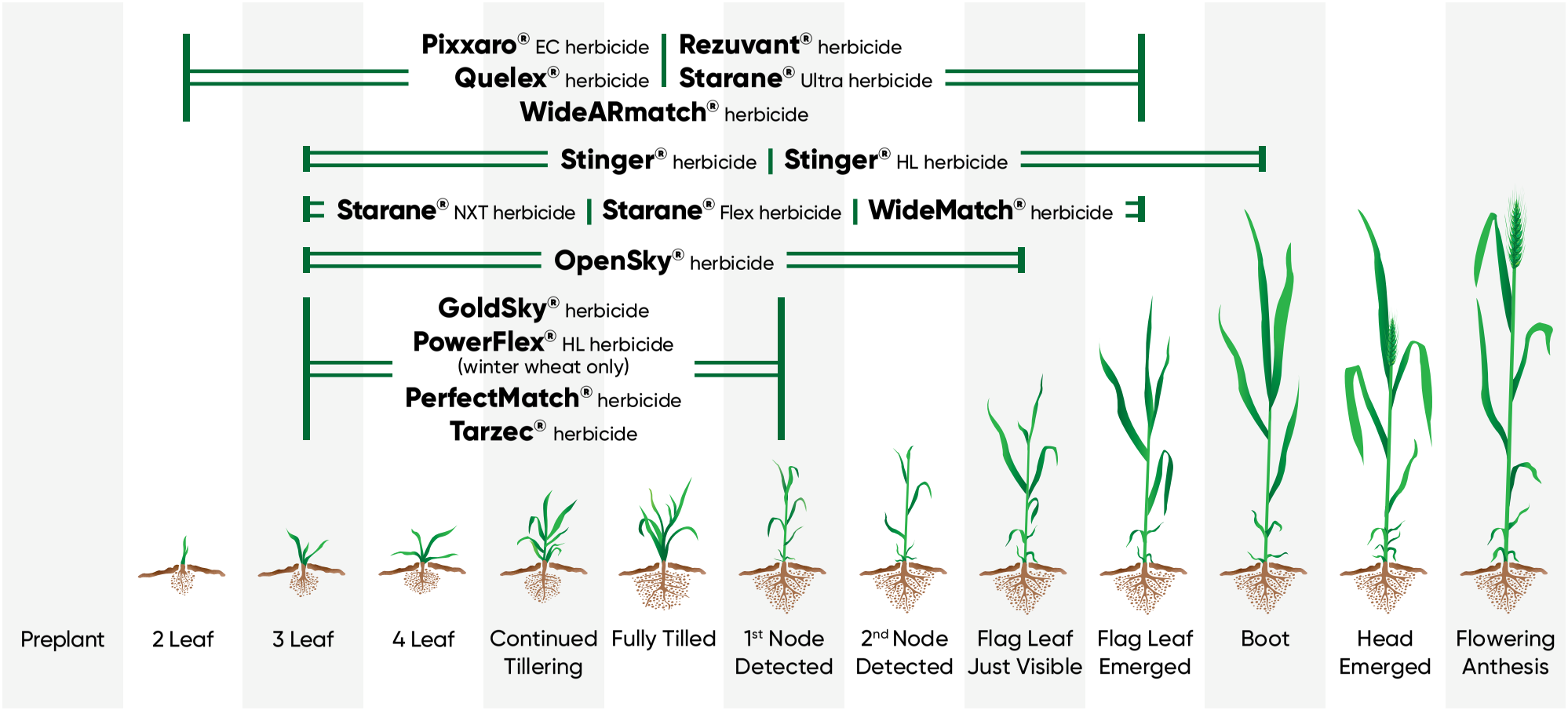
Cereal herbicide



Notes:

Herbicide application timing

Cereals



CORTEVA™ agriscience

Pixxaro® EC

Arylex™ active

HERBICIDE

Active Ingredient(s): fluroxypyr + Arylex® active

Site of Action: Group 4

Formulation Type: EC

Package Size(s): 2x2.5 gal jug, 250 gal and Bulk

Rainfast: 1 hr

Pre-harvest Interval: 60 days

Features:

- Arylex active, an active ingredient developed by Corteva Agriscience, combined with our trusted molecule, fluroxpyr, delivers outstanding control of wild buckwheat, marestail, redroot pigweed, henbit, chickweed and common lambsquarters
- Arylex active has a unique site of action compared to other Group 4 chemistries
- Pixxaro EC herbicide brings an elevated fluroxypyr load for tough weeds
- Excellent tank-mix partner
- Rotational flexibility

Top Weeds Controlled	
Buckwheat, wild	Marestail/ horseweed
Chickweed, common	Mallow, common
Henbit	Pigweed, redroot
Kochia	Prickly lettuce
Lambsquarters, common	Redstem filaree

Recommendation(s):

Postemergence Application (spring, winter wheat, barley, triticale)**:**

Pixxaro® EC herbicide	***6 oz***
+ 2,4-D*	*0.5 lb/A*
+ NIS	*1 qt/100 gal*

**Phenoxy herbicide application restrictions will vary. Consult the label to determine growth stage restrictions before adding to the tank as well as any other restrictions.*

- Pixxaro EC application timing: from the 2-leaf crop growth stage up to flag leaf emergence

Crop Rotation Needed	
Barley, triticale, wheat (spring, winter, and durum)	0 months
Field corn, sweet corn	3 days
Oats, sorghum	14 days
Alfalfa*, canola, cotton, millet, popcorn, rice, rye, seed corn, soybean, sugarcane, sunflower	4 months
Brassica (cole) leafy vegetables, camelina, chickpea, clover, dry bean, flax, mustard, peanut, peas (dry and succulent), safflower, sugar beet	9 months
Other crops not listed	15 months

**Refer to crop label*

PowerFlex® HL

HERBICIDE

Active Ingredient(s): pyroxsulam
Site of Action: Group 2
Formulation Type: WDG
Package Size(s): 4 x 10 lb bottle
Rainfast: 4 hours
Pre-harvest Interval: 60

Features:

- Excellent control of the toughest grass weeds in winter wheat, including downy brome, true cheat, wild oats and ALS-susceptible Italian ryegrass
- Control of mustard species, including field pennycress, flixweed, tansymustard, Shepherd's purse, Jim Hill (tumble) mustard and blue mustard
- Additional control of key broadleaf weeds such as Russian thistle, pigweed, bedstraw (cleavers) and chickweed
- Combines excellent crop safety with a wide application window for maximum flexibility in managing time and resources
- Tank-mix-compatible with a wide range of insecticides, fungicides and broadleaf herbicides, including 2,4-D ester and MCPA ester

Top Weeds Controlled	
Cheat	Pennycress
Downy brome	Shepherd's purse
Flix weed	Tansy mustard
Italian ryegrass	Wild oats
Mustard	

See label for complete list of weeds controlled.

Recommendation(s):

Application:

Powerflex® HL herbicide	***2 oz***
+ AMS	*8.5-17 lbs/100 gal*
+ COC or NIS	*1 gal or 1 qt/100 gal*

Consider:

+ 2,4-D ester* or MCPA ester*

**Phenoxy herbicide application restrictions will vary. Consult the label to determine growth stage restrictions before adding to the tank as well as any other restrictions.*

- Powerflex HL application 3-leaf to jointing stage
- Apply post-emergence in either fall or spring from three-leaf to jointing stage
- Apply to broadleaf weeds before they exceed 2" in height or diameter
- DO NOT use 2,4-D amine, dicamba or OP insecticide as a tank mix partner
- If liquid fertilizer is used, spray solution should not be greater than 50% liquid nitrogen and should not exceed 30 lbs of actual nitrogen per acre
- Temporary crop injury may result when liquid nitrogen is used. May cause leaf burn, yellowing or reduced growth due to the activity of the liquid fertilizer on the crop
- DO NOT use oil adjuvants with spray solutions containing nitrogen fertilizer

Quelex®

Arylex™ active

HERBICIDE

Active Ingredient(s): florasulam + halauxifen-methyl
Site of Action: Group 2 + Group 4
Formulation Type: WDG
Package Size(s): 6 x 1.875 lb bottle
Rainfast: 4 hours
Pre-harvest Interval: 60 days

Features:

- Controls 28 broadleaf weeds, including henbit, shepherd's purse, mustards, flixweed, pigweed, lambsquarters, geranium and marestail
- Arylex®, a new Group 4 active ingredient, is an effective tool for ALS- and glyphosate-resistant weed management
- Apply in the spring or fall; activity on weeds in both warm and cold temperatures
- Convenient premix formulation with a low use rate

Top Weeds Controlled	
Chickweed	Mustards
Henbit	Pigweed
Lambsquarters	Wild buckwheat
Marestail	

Crop Rotations	
Field, seed and sweet corn, soybean	3 months
Alfalfa	9 months

See label for complete list of weeds controlled.

Recommendation(s):

Application:

Quelex® herbicide	***0.75 oz***
+ MSO *or* COC *or* NIS	*1 gal/100 gal* *1 qt/100 gal*

- Apply 2-leaf to flag leaf emergence stage
- Do not use crop oil concentrate or methylated seed oil when tank mixed with fertilizer

Burndown Application:

Quelex	***0.55 oz***

Rezuvant®

Arylex™ active

HERBICIDE

Active Ingredient(s): pinoxaden + Arylex® active + fluroxypyr

Site of Action: Group 1 + Group 4 + Group 4

Formulation Type: EC

Package Size(s): 120 mini – 2x2.5 gal

Rainfast: 1 hour

Pre-harvest Interval: 60 days

Features:

- Cross-spectrum control of broadleaf and grass weeds in one, straightforward solution
- Effective resistance management in your crop rotation
- Convenient tank mix capabilities with other herbicides (see label for guidelines)
- Flexible for performance in all situations

Top Weeds Controlled	
Giant ragweed	Marestail
Green foxtail	Persian darnell
Italian ryegrass	Yellow foxtail
Kochia	Wild buckwheat
Lambsquarters	Wild oats

See label for complete list of weeds controlled.

Recommendation(s):

Application:

Rezuvant® herbicide — ***16.4 fl oz***

- Apply 2-leaf to flag leaf emergence stage
- Only weeds that have emerged at the time of application will be controlled
- Livestock may be grazed on treated crops 30 days following application
- DO NOT apply closer than 30 days before cutting of hay
- DO NOT feed treated or barley straw to livestock for a minimum of 60 days following application

Crop Rotation Needed	
Barley, wheat (spring, winter, and durum)	0 months
Canola, cotton, millet, popcorn, rice, rye, seed corn, soybean, sugarcane, sunflower, field corn, oats, sorghum, sweet corn	4 months
Alfalfa, brassica (cole) leafy vegetables, camelina, chickpea, clover, dry bean, flax, mustard, peanut, peas (dry and succulent), safflower, sugar beet	9 months
Potato*	10 months
Other crops not listed	15 months

** For rotation to potatoes, precipitation (including irrigation) must be greater than 16 inches during the 10 months following application of Rezuvant. Otherwise, rotation to potatoes is recommended 15 months following application.*

Tarzec®

Arylex™ active

HERBICIDE

Active Ingredient(s): Pyroxsulam + Arylex® Active

Site of Action: Group 2 + Group 4

Formulation Type: WDG

Package Size(s): 4 x 5 lb.

Rainfast: 4 hours

Pre-harvest Interval: 60 days

Features:

- Safe and dependable grass and broadleaf weed control for cleaner fields, cleaner harvest and reduced dockage
- Excellent control of the toughest grass weeds, including downy brome, Italian ryegrass and wild oats
- Excellent crop safety and wide application window for maximum flexibility in managing time and resources
- Tank-mix compatible with a wide range of insecticides, fungicides and other broadleaf herbicides

Crop Rotation Needed[1,2]	
Wheat *(including spring, winter, and durum)* and triticale	1 month
Soybean[3]	5 months
Barley, field corn, grasses, millet, oats, popcorn, seed corn, sweet corn, grain sorghum, sunflower	9 months
Alfalfa, camelina, canola, chickpea, cotton, dry bean, pea (dry and succulent), flax, mustard, peanuts, safflower, sugar beet, sunflower	9 months
Other crops not listed	15 months

1 See label for crop rotation intervals for ID, OR and WA.

2 Minimum number of months that must pass before planting other crops after application of Tarzec herbicide.

3 As a rotation crop, soybeans may be planted 3 months following an application of Tarzec in February or later in the following states: Alabama, Arkansas, Delaware, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Missouri, Mississippi, North Carolina, Nebraska, New Jersey, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas and Virginia. However, to ensure adequate crop safety, avoid planting soybeans prior to April 30 following an application of Tarzec made before February. All other states not listed require a minimum rotation interval of 5 months after an application of Tarzec.

Recommendation(s):

Postemergence Application *(winter wheat and triticale)*:

Tarzec® herbicide	***1 fl oz***
+ NIS*	*1-2 qt/100 gal*

Consider:

+ 2,4-D ester^

**If mixing with 2,4-D ester, use 0.5-1 qt of NIS/100 gal. If EC herbicide such as 2,4-D ester exceeds 6 oz, use the lower rate of NIS*

^Phenoxy herbicide application restrictions will vary. Consult the label to determine growth stage restrictions before adding to the tank as well as any other restrictions.

Application Timing and Precautions:

- Apply 1 fl oz per acre in winter wheat
- Apply by ground (15 gpa)
- Apply Tarzec postemergence in either the fall or spring from the 3-leaf to jointing stage
- Best results are obtained when application is made to weeds that are actively growing
  - » For grass weeds, apply from the 2-leaf to 2-tiller stage
  - » Apply when weeds are 2-4 inches in height or diameter

Broadleaf Weeds Controlled or Suppressed

Grass weeds controlled*			
S Barley, *foxtail*[1,2]	C Brome, *Japanese*[1,2]	C Chess, *hairy*[1,2]	S Rescuegrass[1,2]
C Barnyardgrass[2]	C Brome, *ripgut*[1,2]	C Corn, *volunteer*[2]	C Ryegrass, *Italian*[1,2]
C Blackgrass[1,2]	S Canarygrass, *hood*[1,2]	S Foxtail, *green*[2]	C Oat, *wild*[1,2]
C Bluegrass, *bulbous*[1,2]	S Canarygrass, *littleseed*[1,2]	C Foxtail, *yellow*[2]	C Windgrass[1,2]
C Brome, *downy*[1]	C Cheat[1,2]	S Quackgrass[1,2]	
Broadleaf weeds controlled*			
S Bindweed, *field*[1,2]	S Evening-primrose, *cutleaf*[1,2]	S Kochia[2]	C Smartweed, *annual*[2]
C Bittercress, *hairy*[1,2]	C Falseflax, *smallseed*[1,2]	S Lettuce, *prickly*[1,2]	S Sowthistle, *annual*[1,2]
S Buckwheat, *wild*[2]	C Fiddleneck, *coast*[1,2]	C Mustard, *black*[1,2]	C Soybean, *volunteer*[2]
C Burclover, *spotted*[1,2]	C Flax, *volunteer*[1,2]	C Mustard, *blue*[1,2]	C Speedwell sp.[1,2]
C Buttercup, *smallflower*[1,2]	C Flixweed[1,2]	C Mustard, *tumble*[1,2]	S Sunflower, *common*[2]
C Canola, *volunteer*[1,2]	C Fumitory[1,2]	C Mustard, *wild*[1,2]	C Tansymustard, *pinnate*[1,2]
S Coreopsis, *plains*[1,2]	C Geranium, *Carolina*[1,2]	C Mustard, *wormseed*[1,2]	S Thistle, *Canada*[2]
C Chickweed, *common*[1,2]	C Gromwell, *corn*[1,2]	C Pansy[1,2]	C Thistle, *Russian*[2]
C Chickweed, *mouseear*[1,2]	C Hempnettle, *common*[2]	C Pennycress, *field*[1,2]	C Vetch, *hairy*[2]
C Cleavers[1,2]	C Henbit[1,2]	C Pepperweed, *Virginia*[1,2]	C Wallflower, *bushy*[1,2]
C Clover, *white*[1,2]	C Horseweed *(marestail)*[1,2]	C Pigweed, *redroot*[2]	
C Deadnettle, *purple*[1,2]	C Lambsquarters, *common*[2]	C Shepherd's-purse[1,2]	

* Will not control known ALS (Group 2) resistant biotypes of labeled weeds except for broadleaf weeds controlled by halauxifen-methyl.

[1] Fall application | [2] Spring application | **C** - Controlled | **S** - Suppressed

Notes:

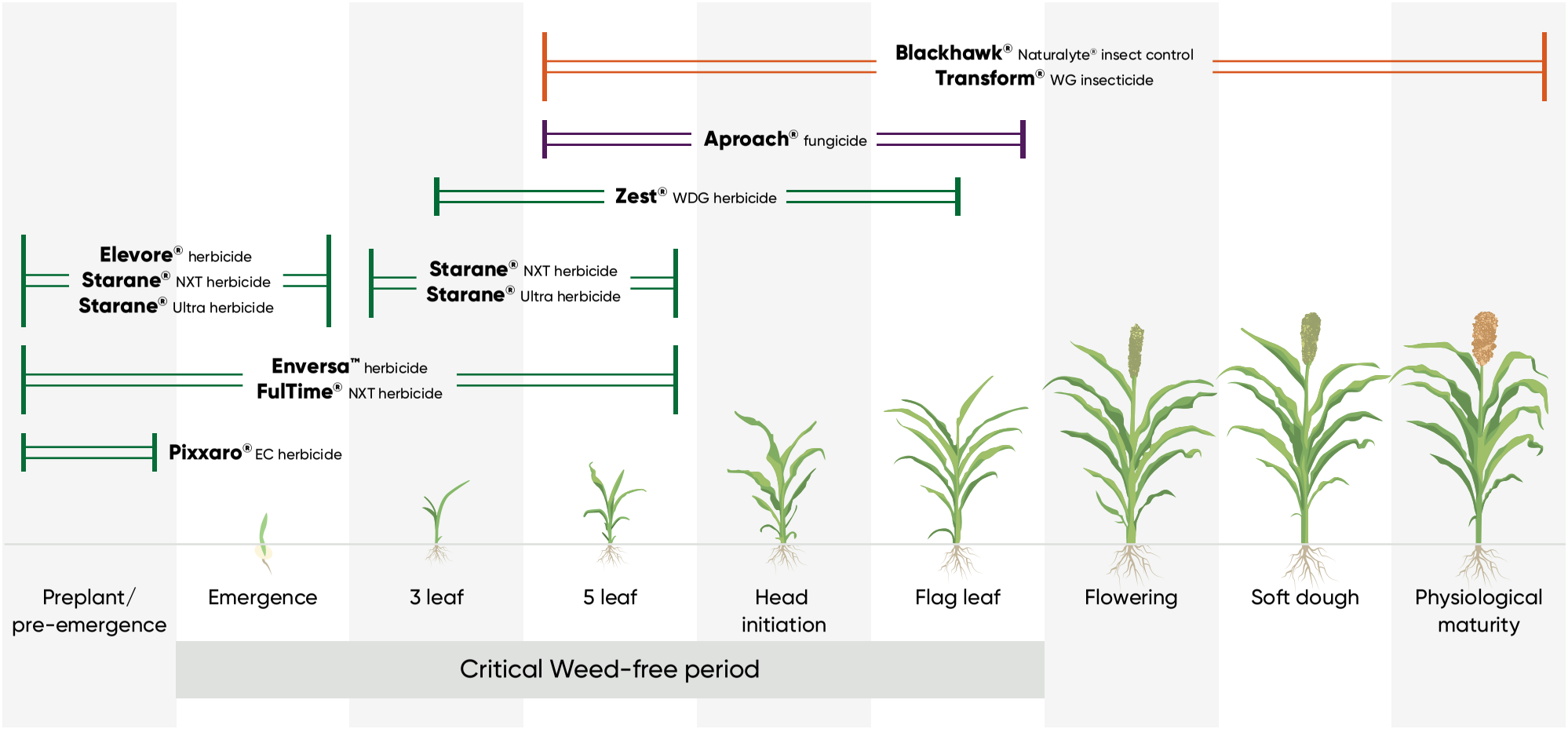
Notes:

Sorghum herbicide

Notes:

Herbicide application timing

Grain Sorghum



CORTEVA™ agriscience

FulTime® NXT

HERBICIDE

Active ingredient(s): acetochlor + atrazine
Site of action: Group 15 + Group 5
Formulation type: CS
Package size(s): bulk
Rainfast: N/A
Pre-harvest interval: 60 (Refer to federal label for specific crop PHI)

Features:

- Control tough annual grasses and broadleaf weeds in no-till, reduced tillage and heavy residue
- Delivers time released control of foxtail, black nightshade, waterhemp and other problem weeds

Top weeds controlled	
Barnyardgrass	Nightshade, sp.
Cocklebur, common	Panicum, fall
Crabgrass, sp.	Pigweed, sp.
Lambsquarters, common	Waterhemp
Foxtail, sp.	Witchgrass

See label for full details

Recommendation(s):

Preemergence Application

FulTime® NXT herbicide	***2.5-3 qt***
+ loaded glyphosate	*32-44 oz*
+ AMS	*8.5-17 lbs/100 gal*
+ NIS or	*1 qt/100 gal*
or COC	*1 gal/100 gal*

Postemergence Application

FulTime NXT	***2.5-3 qt***

- Postemergence surface applications of Fultime NXT must be made before the crop exceeds 11 inches in height (in general, 5 to 6 leaf grain sorghum).
- Application must be made prior to weed emergence or in a tank mixture that controls emerged weeds
- Postemergence applications in liquid fertilizer carriers can result in crop injury
- When making applications to grain sorghum, do not exceed a total of 3.7 quarts per acre of FulTime NXT per year
- FulTime NXT must be made ONLY to grain sorghum planted with seed that has been properly treated with seed protectant or safener
- Consult product labels on maximum ai. application per season when planning your herbicide program.

Zest® WDG

HERBICIDE

inzen™

Active ingredient(s): nicosulfuron
Site of action: Group 2
Formulation type: WDG
Package size(s): 12 X 1 lb
Rainfast: 4 hours
Pre-harvest interval: Graze after soft dough or harvest grain and stover at physiological maturity

Features:

- **Only postemergence herbicide solution for use with the Pioneer® Inzen™ system**
- Best-in-class postemergence weed control of troublesome grass weeds such as foxtail, panicum and barnyardgrass
- Built-in herbicide tolerance of Zest WDG herbicide with the Inzen sorghum trait improves crop safety
- Maximize acres not previously usable for sorghum production

Weed Control with the Inzen trait

Weeds controlled with 0.67 oz./A of Zest WDG

Grass Weed	Height (in.)
Barnyardgrass[1]	4
Signalgrass	2
Crabgrass (large)[2]	2
Foxtail (bristly, giant, green, yellow)	4
Itchgrass	6
Panicum, fall	4
Panicum (Texas, browntop)	3
Ryegrass (Italian, perennial)[1]	6
Sandbur (field, longspine)[2]	3
Wild oats[1]	4
Wild proso millet	4
Witchgrass	6

Recommendation(s) For **inzen™** Traited Sorghum Only:

Postemergence Application

Zest® WDG herbicide	***1-1.33 oz***
+ Atrazine	*0.5 lb/A*
+ COC	*1 gal/100 gal*
+ AMS	*2 lbs*

Application Timing and Precautions:

- **Max applications:** No more than two per crop season or per year
- Do not apply more than 1.33 oz. in a single application. The maximum total amount of product that can be applied in a year is 1.8 oz.
- Allow minimum of 7 days between applications
- Apply to emerged grain sorghum containing the Inzen trait that is up to 20 inches tall. Applications made to 4-20 inch tall grain sorghum approximately five leaf stage (growth stage 2) to flag leaf visible (growth stage 4) are advised for best crop resistance. **Do not apply to grain sorghum taller than 20 inches.**
- Apply Zest WDG when weeds are young and actively growing, but before weeds exceed heights listed
- Consult product labels on maximum ai. application per season when planning your herbicide program.
- Consult atrazine label for plant height restrictions.

Inzen trait untreated

Inzen trait treated with Zest® WDG herbicide

[1] *Naturally occurring resistant biotypes are known to occur. If weed escapes occur, treat with an herbicide having a mode of action other than Group 2 and/or non-chemical methods to remove escapes, as practicable, with the goal of preventing seed production.*

[2] *Refer to specific weed instructions section of this label.*

Notes:

Insecticides

Intrepid Edge®

INSECTICIDE

Prepare now to control
yield-robbing pests

Features and benefits

- Broad spectrum of Lepidoptera pest activity
- Fast knockdown
- Long residual control
- Convenience with no mixing needed
- Avoid potential disruption of beneficial insects caused by other insecticides
- Will not flare mites or aphids
- Integrated Pest Management compatible
- Two modes of action

Application rates soybeans	
Corn earworm	4 - 6.4 fl oz/A
Fall armyworm	
Soybean looper	

Soybean restrictions

- **Pre-harvest interval**
  Do not apply within 28 days of seed harvest.
- **Minimum treatment interval**
  Do not make applications less than 4 days apart.
- **Maximum number of applications**
  Do not make more than 4 applications per year.
- **Replanting interval**
  A 7-day re-planting interval is required for residues of methoxyfenozide.

Chart 1: Corn earworm control in soybeans

Number per 25 sweeps 5 DAA and 13 DAA | Dr. Gus Lorenz, Lonoke, AR 2015

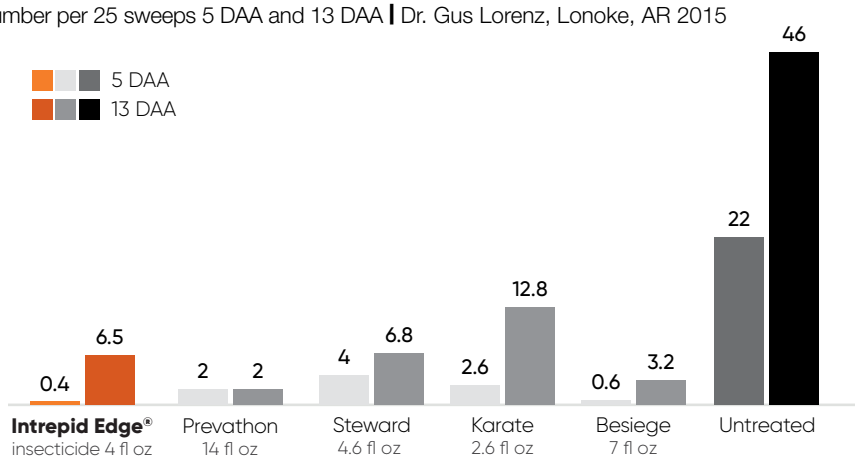
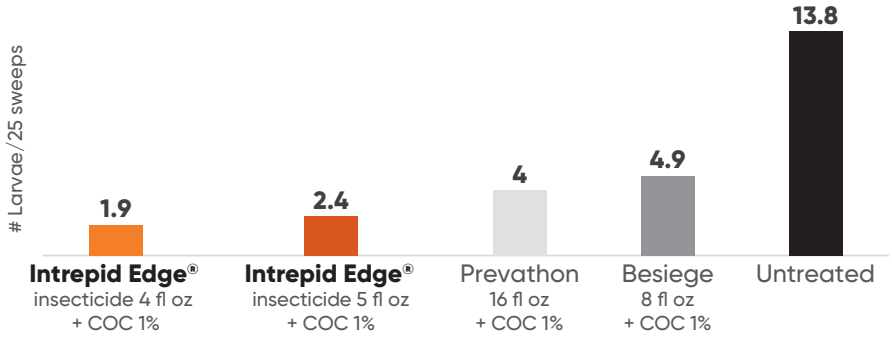


Chart 2: Soybean looper control in soybeans

Trials: 6 | 0.5 WAAA = looper counts made at 4 days after application

Dr. Brown (LA), Dr. Towles (LA), Dr. Catchot (MS), Dr. Stewart (TN), Dr. Gore (MS), Dr. Cook (MS) 2020



Visit us at **IntrepidEdge.com**

CORTEVA™ agriscience

Notes:

Ridgeback®

Isoclast™ active

INSECTICIDE

Active ingredient(s): sulfoxaflor and bifenthrin
Site of action: Group 4C & 3A
Formulation type: SE
Package size(s): 2x2.5s, 120 gal
Rainfast: N/A
Restricted entry interval (REI): 24 hours

Features:

- Quick knockdown activity
- Broad-spectrum activity – includes sap-feeding and chewing insect pests as well as mites
- Activity on target pests via contact and ingestion
- Dual mode of action – including a novel Group 4C chemistry, Isoclast active, that will control pyrethroid resistant soybean aphids and will enhance activity on stink bugs
- Convenient, ready-to-use premix – no additional mixture needed
- Additional labeled crops include chickpea, dry beans, and potatoes *(refer to label for use)*

Recommendation(s):

Applications:

Soybeans

Target Pests		Rate (fl oz/A)
Bean leaf beetle Japanese beetle *(adults)*	Soybean aphid*	*8.6 – 10.3*
Twospotted spider mite		*11 – 13.8*

RESTRICTIONS: DO NOT apply within 18 days harvest.

*If pyrethroid resistant soybean aphids are known to be present, use 10.3 fl oz / acre of Ridgeback.

- For fields with pyrethroid-susceptible soybean aphids plus other secondary pests of soybean (e.g., Japanese beetle, bean leaf beetle, lepidopteran larvae) the suggested use rate is 8.6 fl oz / acre.
- Use a higher rate in the rate range for heavy pest populations.
- See label for full list of pests controlled.
- Apply in water - minimum of 10 gpa by ground application or 2 gpa by air.

Corn

Target Pests		Rate (fl oz/A)
Aphids *(including, corn leaf, bird cherry oat, greenbug)* Armyworms Corn earworm	Corn rootworm *(adults)* Cutworms Japanese beetle *(adults)*	*8.6 – 10.3*
Twospotted spider mite		*11 – 13.8*

RESTRICTIONS: DO NOT apply within 30 days harvest.

- See label for full list of pests controlled.
- Use a higher rate in the rate range for heavy pest populations.
- Apply in water - minimum of 10 gpa by ground application or 2 gpa by air.
- For aerial applications, 1 to 2 quarts of emulsified oil may be substituted for 1 to 2 quarts of water in the finished spray.
- Do not apply product 3 days before bloom or until after seed set.

Transform® WG

Isoclast™ active

INSECTICIDE

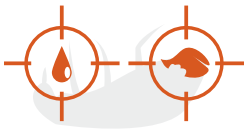
Active ingredient(s): sulfoxaflor
Site of action: Group 4C
Formulation type: WDG
Package size(s): 2 x 8 lb jug
Rainfast: N/A
Pre-harvest interval: Refer to federal label for specific crop PHI

Features:

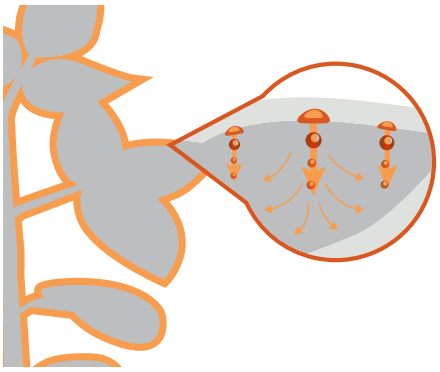
- Distinct mode of action as the only Group 4C class of insecticides.
- Effectively controls sap-feeding insects by contact and ingestion activity through translaminar activity.
- Minimal impact on beneficial insects.
- Does not flare mites.
- Effective at low use rate.

Mode of entry into insect pest

- Contact and ingestion



Movement within the plant



Translaminar Activity

Moves from the surface of the leaf to inside the leaf

Systemic Activity

Moves upward through plant xylem into new growth

Recommendation(s):

Applications:

Soybeans

Target Pests		Rate (fl oz/A)
Soybean Aphid		*0.75 - 1*
Brown stink bug *(suppression)*	Southern green stink bug *(suppression)*	*2 - 2.25*

RESTRICTIONS: DO NOT apply within 7 days of seed, forage or hay harvest

- Minimum Treatment Interval: Do not make applications less than 14 days apart.
- Do not make more than four applications per crop.
- Do not make more than two consecutive applications per crop.
- Do not apply more than a total of 8.5 oz of Transform® WG insecticide (0.266 lb ai of sulfoxaflor) per acre per year.
- No more than two applications may be made to soybean forage.

Sorghum

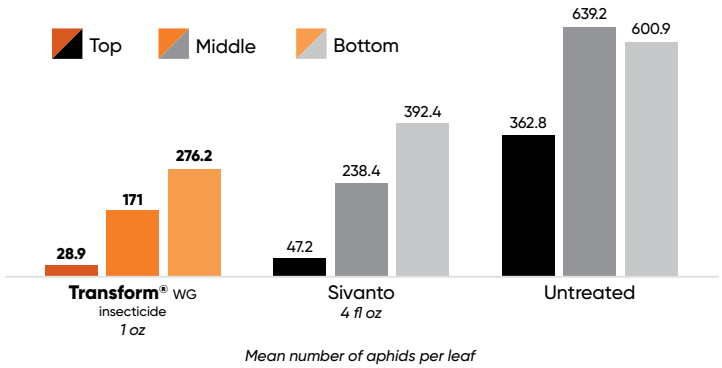
Target Pests	Rate (fl oz/A)
Aphid	*0.75-1.5*

RESTRICTIONS: DO NOT apply within14 days of grain or straw harvest or within 7 days of grazing, forage, fodder, or hay harvest.

- **Not for use on sweet sorghum**
- Minimum Treatment Interval: Do not make applications less than 14 days apart.
- Do not make more than two applications per acre per year.
- Do not apply more than a total of 3 oz of Transform WG (0.09 lb ai of sulfoxaflor) per acre per year.
- Do not use on sweet sorghum.
- Do not apply product 3 days before bloom or until after seed set

Sorghum trial data: knockdown efficacy of sugarcane aphids in sorghum

2015-2016 Wayside, MS | summary across 2 trials



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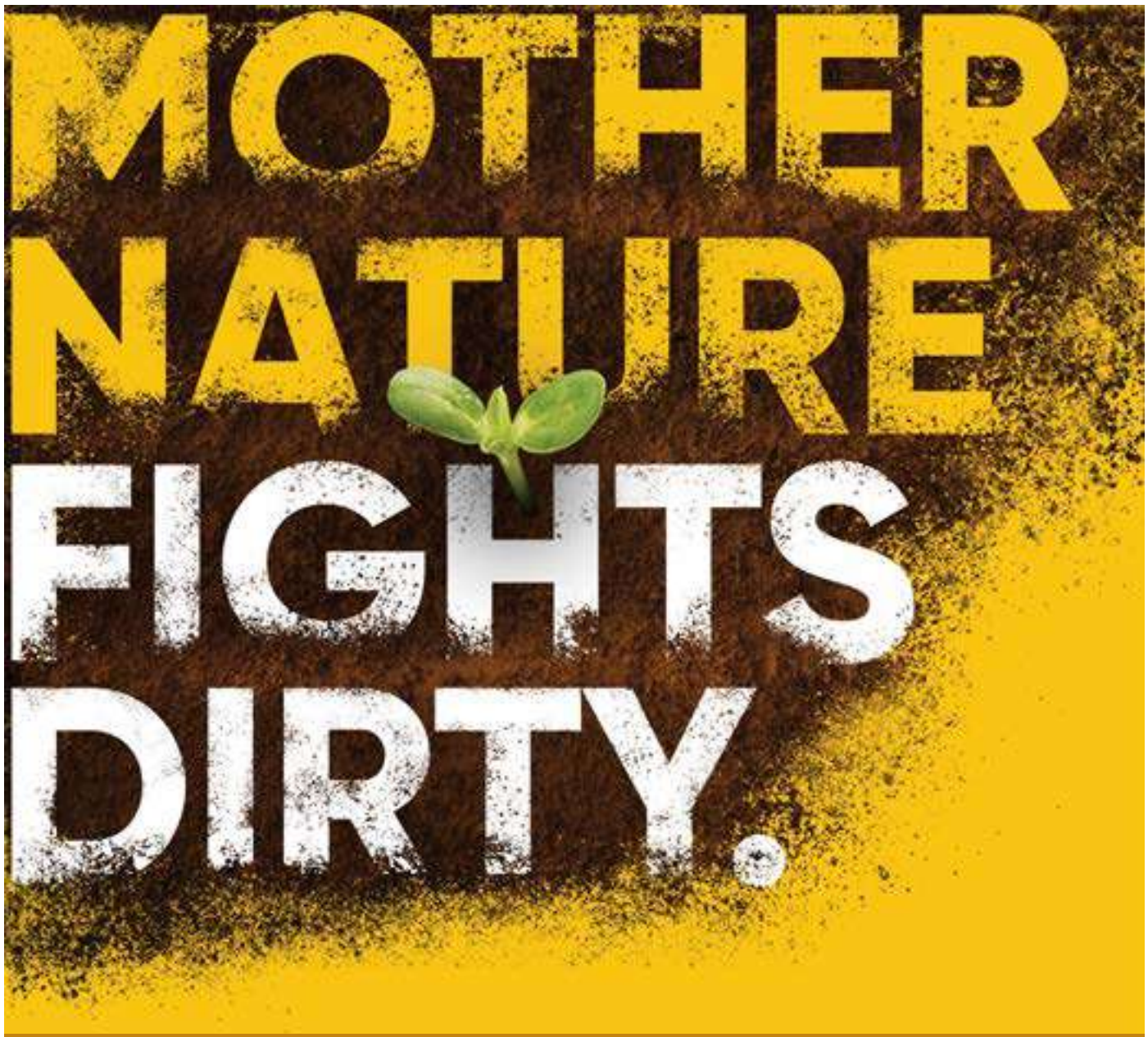


SEED APPLIED TECHNOLOGIES

Lumivia® CPL

INSECTICIDE SEED TREATMENT

Active Ingredient(s): Chlorantraniliprole
Site of Action: Group 28
Formulation Type: FS

Key benefits

- Extensive protection of the seed, roots and seedling above ground due to its unique approach that involves systematic uptake and translocation
- Easy to apply for on-farm or retail treating
- The first insecticide seed treatment to use chlorantraniliprole, an anthranilic diamide chemistry (IRAC Group 28)
- Fast-acting protection of seed and seedlings with fast-acting properties
- May be mixed with other insecticides for multiple modes of action and an increased pest spectrum

Pest	Lumivia CPL	Neonic
Aphid	-	++
Armyworm	++++	-
Cutworm	++++	-
Grasshopper	++	-
Hessian Fly	-	++
Pea leaf weevil larvae	+++	++
Seed Corn Maggot	+++	++
Wireworm	+++	++

- No control or not labeled
+ Feeding reduction
++ Average protection
+++ Above average protection
++++ Excellent protection

Recommendation(s):

Applications:

Cereal Grains

Target Pests		Rate (per 100lb of seed) fl oz	Rate (per 100lb of seed) Active ingredient
Armyworms	Seedcorn maggots	0.5 – 0.75	0.02 – 0.03 lb
Cutworms	Wireworms		
Grasshopper			

RESTRICTIONS: DO NOT exceed a maximum of 0.054 lb chlorantraniliprole per acre (25 grams ai/acre) regardless of seeding density.

Max Annual Rate: 0.2 lb ai/A of chlorantraniliprole-containing products

Seed Crop: Barley, Buckwheat, Millet (pearl, proso) Oats, Rye, Triticale, Wheat

- Plant seeds treated with this product at a soil depth of 1 to 2 inches.
- Treated seed exposed on soil surface may be hazardous to aquatic invertebrates. Cover or collect treated seeds spilled during loading.
- Not for use on rice.

Dried Shelled Pea and Bean (Except Soybean)

Target Pests	Rate (per 100lb of seed) fl oz	Rate (per 100lb of seed) Active ingredient
Armyworms	**Planting Rate 75 - 180 lbs/A:**	
Cutworms	0.5 – 0.74	0.02 – 0.03 lb
Grasshopper		
Pea leaf weevil	**Planting Rate less than 75 lbs/A:**	
Seedcorn maggots	0.75 – 1.75	0.03 – 0.07 lb
Wireworms		

RESTRICTIONS: DO NOT exceed a maximum of 0.054 lb chlorantraniliprole per acre (25 grams ai/acre) regardless of seeding density.

Max Annual Rate: 0.2 lb ai/A of chlorantraniliprole-containing products

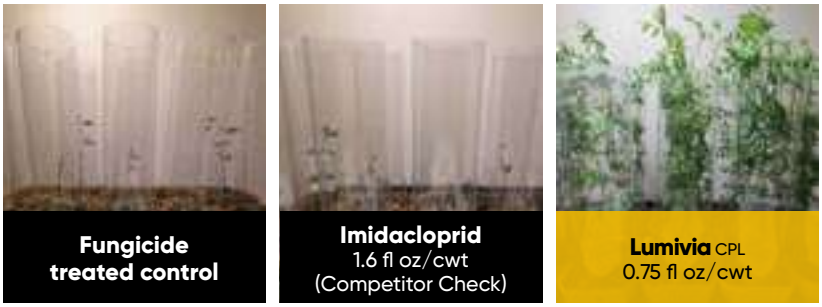
Seed Crop: Dried cultivars of bean (Lupinus spp.) (includes grain lupin, sweet lupin, white lupin, and white sweet lupin); (Phaseolus spp.) (includes field bean, kidney bean, lima bean (dry), navy bean, pinto bean, tepary bean); bean (Vigna spp.) (includes adzuki bean, blackeyed pea, catjang, cowpea, Crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean); broad bean (dry); chickpea; guar; lablab bean; lentil; pea (Pisum spp.) (includes field pea); pigeon pea)

- Plant seeds treated with this product at a soil depth of 1 to 2 inches.
- Treated seed exposed on soil surface may be hazardous to aquatic invertebrates. Cover or collect treated seeds spilled during loading.

SEED APPLIED TECHNOLOGIES

CORTEVA™ agriscience

Efficacy against black cutworm on lentils | 16 Days After Infestation

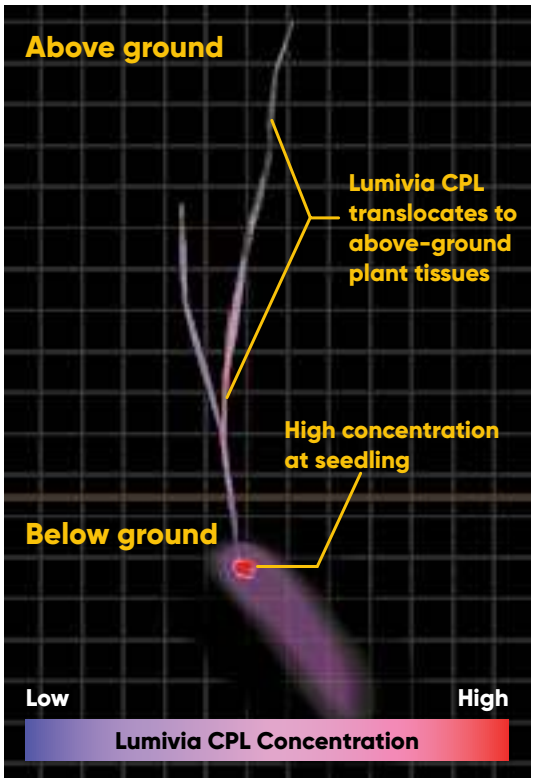


With Lumivia CPL seed treatment protection in place, growers can improve uniform plant stand and higher yield potential.

Protection of pulse crops with high seedcorn maggot pressure
Seedcorn maggot trial results | Pasco, Washington (2022)

In both crops, seeds treated with Lumivia CPL demonstrate healthier and more robust stands.

Translocation of Lumivia® CPL insecticide seed treatment in wheat



SEED APPLIED TECHNOLOGIES

CORTEVA™ agriscience

*CPL stands for cereals product label

This reference guide is not intended as a substitute for the product label for the product(s) referenced herein. Product labels for the above product(s) contain important precautions, directions for use, and product warranty and liability limitations, which must be read before using the product(s). Applicators must be in possession of the product label(s) at the time of application. Always read and follow all label direction and precautions for use when using any pesticide alone or in tank-mix combinations.

C-1019FI

Premium Soybean Seed Treatment

Active Ingredient(s): Oxathiapiprolin + Ipconazole + Picoxystrobin + Mefenoxam + Imidacloprid

Site of Action: Group 49 + Group 3 + Group 11 + Group 4 + Group 4A

Formulation Type: FS

Key benefits

- **Robust Fungicide Package:** Protect your genetic investment with soybean seed treatments that feature more modes of action against top yield-robbing diseases: phytophthora, pythium, rhizoctonia, fusarium, and phomopsis.
- **Best-in-Class Protection Against Phytophthora:** LumiTreo™ fungicide seed treatment contains Oxathiapiprolin, the active in Lumisena® fungicide seed treatment, which offers best-in-class protection against the number one early-season disease in soybeans, Phytophthora. In multi-year field trials across the U.S., Lumisena has been proven to significantly boost yield-potential and plant stands under Phytophthora pressure versus the existing industry-standard seed treatment.
- **Broad-Spectrum Insect Control:** C-1019FI premium seed treatment includes Imidacloprid to improve plant health through reduced early-season leaf damage and lowering the chance of late-season infection by protecting against, Aphids, Bean leaf beetle and Seedcorn maggot.

Recommendation(s):

Applications:

Use rate:		Units:			Density: (lbs/gal)
CWT	140K seed	Per Gallon	15 gallon keg:	30 gallon keg:	
3.9	1.95	65.64	985	1,969	9.34

Brand Name	Active ingredient	Phytophthora	Pythium	Rhizoctonia	Fusarium	Phomopsis
LumiTreo™ fungicide seed treatment	Ipconazole			x	x	x
	Oxathiapiprolin	x				
	Picoxystrobin		x	x	x	
–	Mefenoxam	x	x			
	Imidacloprid					
Number of Modes of Action		**2**	**2**	**2**	**2**	**1**

Roots protected by Lumisena drive through the diseased disk

Roots protected by Metalaxyl die or are severely injured upon contact with diseased disk.

Potential Yield Benefit

+4 bu/A Yield Advantage in field areas with higher phytophthora susceptibility*

+1 bu/A Yield Advantage across the farm*

*Data is based on 638 head-to-head comparisons between Lumisena® fungicide seed treatment (0.568 fl oz/cwt) and Metalaxyl (0.75 fl oz/cwt) in the top soybean-producing states through Dec. 12, 2017. Comparisons were made utilizing the same soybean variety.

Win the Season With:

- More modes of action against early season diseases
- Control against key insects and pests
- Strong, healthy plant stands and improved vigor

LumiTreo™ FUNGICIDE SEED TREATMENT

Lumisena® FUNGICIDE SEED TREATMENT

SEED APPLIED TECHNOLOGIES

CORTEVA™ agriscience

C-1020FI

Premium Soybean Seed Treatment

Active Ingredient(s): Oxathiapiprolin + Ipconazole + Ethaboxam + Picoxystrobin + Mefenoxam + Imidacloprid

Site of Action: Group 49 + Group 3 + Group 22 + Group 11 + Group 4 + Group 4A

Formulation Type: FS

Key benefits

- **Robust Fungicide Package:** Protect your genetic investment with soybean seed treatments that feature more modes of action against top yield-robbing diseases: phytophthora, pythium, rhizoctonia, fusarium, and phomopsis.
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Recommendation(s):

Applications:

Use rate:		Units:			Density: (lbs/gal)
CWT	140K seed	Per Gallon	15 gallon keg:	30 gallon keg:	
4.2	2.10	60.95	914	1,829	9.34

Brand Name	Active ingredient	Phytophthora	Pythium	Rhizoctonia	Fusarium	Phomopsis
LumiTreo™ fungicide seed treatment	Ipconazole			x	x	x
	Oxathiapiprolin	x				
	Picoxystrobin		x	x	x	
Lumiante™ fungicide seed treatment	Ethaboxam	x	x			
	Imidacloprid					
	Mefenoxam	x	x			
Number of Modes of Action		**3**	**3**	**2**	**2**	**1**

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Lumiante® FUNGICIDE SEED TREATMENT

LumiTreo™ FUNGICIDE SEED TREATMENT

Lumisena® FUNGICIDE SEED TREATMENT

SEED APPLIED TECHNOLOGIES

CORTEVA™ agriscience

C-2023FI

Premium Soybean Seed Treatment

Active Ingredient(s): Oxathiapiprolin + Ipconazole + Thiamethoxam + Picoxystrobin + Mefenoxam

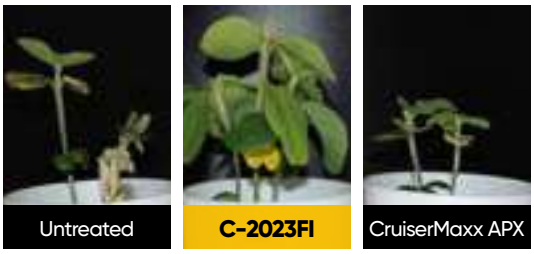
Site of Action: Group 49 + Group 3 + Group 4A + Group 11 + Group 4

Formulation Type: FS

Key benefits

- **Robust Fungicide Package:** Protect your genetic investment with soybean seed treatments that feature more modes of action against top yield-robbing diseases: phytophthora, pythium, rhizoctonia, fusarium, and phomopsis.
- **Broad-Spectrum Insect Control:** Protect plant health and seedlings against a range of crop-damaging insect pests with Phalanx during the most vulnerable growing period. Control: aphids, bean leaf beetle, grape colaspis, white grubs, leafhoppers, wireworm, thrips, and seed corn maggot.

Best-in-Class Protection Against Phytophthora:



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Recommendation(s):

Applications:

Use rate:		Units:			Density: (lbs/gal)
CWT	140K seed	Per Gallon	15 gallon keg:	30 gallon keg:	
3.6	1.8	71.1	1,066	2,133	9.39

Brand Name	Active ingredient	Phytophthora	Pythium	Rhizoctonia	Fusarium	Phomopsis
LumiTreo™ fungicide seed treatment	Ipconazole			x	x	x
	Oxathiapiprolin	x				
	Picoxystrobin		x	x	x	
Phalanx™ insecticide seed treatment	Thiamethoxam					
–	Mefenoxam	x	x			
Number of Modes of Action		**2**	**2**	**2**	**2**	**1**

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LumiTreo™ FUNGICIDE SEED TREATMENT

Lumisena® FUNGICIDE SEED TREATMENT

Phalanx™ INSECTICIDE SEED TREATMENT

SEED APPLIED TECHNOLOGIES

CORTEVA™ agriscience

C-3023FI

Premium Soybean Seed Treatment

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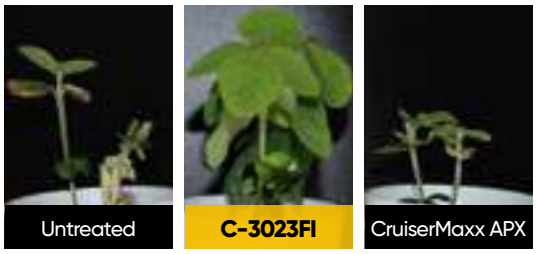

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	Picoxystrobin		x	x	x	
Lumiante™ fungicide seed treatment	Ethaboxam	x	x			
Phalanx™ insecticide seed treatment	Thiamethoxam					
–	Mefenoxam	x	x			
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Lumiante® FUNGICIDE SEED TREATMENT

LumiTreo™ FUNGICIDE SEED TREATMENT

Lumisena® FUNGICIDE SEED TREATMENT

Phalanx™ INSECTICIDE SEED TREATMENT

SEED APPLIED TECHNOLOGIES

CORTEVA™ agriscience

For more information, please contact your local Corteva Agriscience territory manager or call **800-258-3033**.

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