CORN

QUICK HERBICIDE REFERENCE GUIDE 2025

This factsheet represents herbicides registered on field corn and available as of April 2025. This list is prone to changes and it is recommended to always refer to Manitoba's Guide to Field Crop Protection and herbicide labels before in-field applications. .

*Important pages to note in the Guide to Field Crop Protection 2025:

Page 60, Table 8: Herbicide Site of Action and Chemical Family for Resistant Weed Management
Page 66, Table 9: Mode of Action, Site of Uptake and Symptoms of Different Herbicide Groups
Page 67, Table 10: Herbicide-Resistant Weeds in Western Canada
Page 76, Table 5: Weed Control in Corn

*Crop Staging is stated according to the herbicide label. For help with leaf staging, refer to Manitoba Crop Alliance's Vegetative Growth Stages factsheet, also attached at the bottom of this document.

Table 1: Fall-Applied Herbicides

Page	Herbicide	Active Ingredient	Group	Site of action	Chemical Family	Crop Staging/Timing	Weed Spectrum	
							Grassy Weeds	Broadleaf Weeds
490	**Express SG**	50% tribenuron-methyl	2	ALS Enzyme Inhibitor	Sulfonylurea (SU)	fall-applied only, with glyphosate		X
243	**Fierce**	160 g/L flumioxazin	14	PPO Inhibitor	N-Phenyl-imide	prior to soil freeze	X	X
		203 g/L pyroxasulfone	15	Very Long Chain Fatty Acid Inhibitor	Chloroacetamide			
269	**Focus**	53 g/L carfentrazone-ethyl	14	PPO Inhibitor	Triazolinone	fall-applied, pre-plant or up to 3 days following planting	X	X
		447 g/L pyroxasulfone	15	Very Long Chain Fatty Acid Inhibitor	Chloroacetamide			
504	**Valtera**	479.2 g/L flumioxazin	14	PPO Inhibitor	N-Phenyl-imide	fall-applied or up to 7 days prior to planting	X (GF only)	X

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Table 2: Pre-Plant Herbicides

Page	Herbicide	Active Ingredient	Group	Site of action	Chemical Family	Crop Staging/Timing	Weed Spectrum	
							Grassy Weeds	Broadleaf Weeds
167	**Carfentrazone**	240 g/L carfentrazone-ethyl	14	PPO Inhibitor	Triazolinone	pre-plant		X
243	**Fierce**	160 g/L flumioxazin	14	PPO Inhibitor	N-Phenyl-imide	7 - 30 days prior to planting	X	X
		203 g/L pyroxasulfone	15	Very Long Chain Fatty Acid Inhibitor	Chloroacetamide			
273	**Frontier Max**	720 g/L dimethanamid-P	15	Very Long Chain Fatty Acid Inhibitor	Acetamide	pre-plant incorporated	X (GF only)	
396	**Prospect**	15 g/L halauxifen	4	Growth Regulators	Pyridine carboxilic acid	pre-plant incorporated	X (BYG only)	X
		27.97 g/L carfentrazone-ethyl	14	PPO Inhibitor	Triazolinone			
504	**Valtera**	479.2 g/L flumioxazin	14	PPO Inhibitor	N-Phenyl-imide	fall-applied or up to 7 days prior to planting	X (GF only)	X

Table 3: Pre-Plant or Pre-Emergent Herbicides (very large window of application)

Page	Herbicide	Active Ingredient	Group	Site of action	Chemical Family	Crop Staging/Timing	Weed Spectrum	
							Grassy Weeds	Broadleaf Weeds
111	**Aatrex**	480 g/L atrazine	5	Photosystem II Inhibitor	Triazine	pre-plant incorporated or pre-emergent, and post-emergent 1 - 6 leaf stage; please see product label		X
145	**Blackhawk**	473 g/L 2,4-D Ester	4	Growth Regulators	Phenoxy acetic acids	pre-plant or up to 3 days following planting		X
		6.1 g/L pyraflufen-ethyl	14	PPO Inhibitor	Phenylpyrazole			
199	**Conquer II**	467 g/L bromoxynil	6	Photosystem II Inhibitor	Nitriles	pre-plant or up to 3 days following planting		X
		15 g/L pyraflufen-ethyl	14	PPO Inhibitor	Phenylpyrazole			
269	**Focus**	53 g/L carfentrazone-ethyl	14	PPO Inhibitor	Triazolinone	fall-applied, pre-plant or up to 3 days following planting	X	X
		447 g/L pyroxasulfone	15	Very Long Chain Fatty Acid Inhibitor	Chloroacetamide			
289	**GoldWing**	420 g/L MCPA Ester	4	Growth Regulators	Phenoxy acetic acids	pre-plant or up to 3 days following planting		X
		13.65 g/L pyraflufen-ethyl	14	PPO Inhibitor	Phenylpyrazole			
293	**Heat Brands**	70% saflufenacil (WG) or	14	PPO Inhibitor	Pyrimidinedione	pre-plant or pre-emergent		X
298	**Heat Complete**	342 g/L saflufenacil	14	PPO Inhibitor	Pyrimidinedione	pre-plant or pre-emergent		X
		500 g/L pyroxasulfone	15	Very Long Chain Fatty Acid Inhibitor	Chloroacetamide			
324	**Insight Liquid SC**	339 g/L tiafenacil	14	PPO Inhibitor	Pyrimidinedione	pre-plant or pre-emergent	X (WO only)	X
347	**Metolachlor**	915 g/L s-metolachlor	15	Very Long Chain Fatty Acid Inhibitor	Chloroacetamide	pre-plant incorporated or pre-emergent, please see product label	X	X
392	**Primextra II Magnum**	320 g/L atrazine	5	Photosystem II Inhibitor	Triazine	pre-plant incorporated or pre-emergent, please see product label	X	X
		400 g/L s-metolachlor	15	Very Long Chain Fatty Acid Inhibitor	Chloroacetamide			
436	**Simazine**	90% simazine or 480 g/L simazine	5	Photosystem II Inhibitor	Triazine	one week prior to planting (incorporated) to 4 days following planting; rainfall required	X	X
474	**Tough EC**	600 g/L pyridate	6	Photosystem II Inhibitor	Phenyl-pyridazines	pre-plant, pre-emergent or post-emergent up to the 8-leaf stage		X
518	**Voraxor**	125 g/L trifludimoxazin	14	PPO Inhibitor	Triazolone	pre-plant or pre-emergent		X
		250 g/L saflufenacil	14	PPO Inhibitor	Pyrimidinedione			
520	**Voraxor Complete**	125 g/Ltrifludimoxazin	14	PPO Inhibitor	Triazolone	pre-plant or pre-emergent	X	X
		250 g/L saflufenacil	14	PPO Inhibitor	Pyrimidinedione			
		500 g/L pyroxasulfone	15	Very Long Chain Fatty Acid Inhibitor	Chloroacetamide			
521	**Zidua**	500 g/L pyroxasulfone	15	Very Long Chain Fatty Acid Inhibitor	Chloroacetamide	pre-plant (up to 30 days), pre-emergent or post-emergent up to 4 leaf	X	X

Table 4: Pre-Emergent Herbicides (small window of application)

Page	Herbicide	Active Ingredient	Group	Site of action	Chemical Family	Crop Staging/Timing	Weed Spectrum	
							Grassy Weeds	Broadleaf Weeds
421	**Rimsulfuron**	25% rimsulfuron	2	ALS Enzyme Inhibitor	Sulfonylurea	pre-emergent, post-emergent up to V2 (RRV ONLY)	X	X
443	**Sortan IS**	20% rimsulfuron	2	ALS Enzyme Inhibitor	Sulfonylurea	pre-emergent, post-emergent up to V3	X	X

Table 5: Post-Emergent Herbicides

Page	Herbicide	Active Ingredient	Group	Site of action	Chemical Family	Crop Staging/Timing	Weed Spectrum	
							Grassy Weeds	Broadleaf Weeds
105	**2,4-D**	564 g/L 2,4-D Amine or 660 g/L 2,4-D Ester	4	Growth Regulators	Phenoxy acetic acids	Foliar: prior to 6" tall; Directed spray: 6+" tall		X
109	**2,4-DB**	625 g/L 2,4-DB	4	Growth Regulators	Phenoxy acetic acids	Directed spray: 15" - tassel, using drop nozzles		X
111	**Aatrex**	480 g/L atrazine	5	Photosystem II Inhibitor	Triazine	pre-plant incorporated or pre-emergent, and post-emergent 1 - 6 leaf stage; please see product label	X	X
141	**Bentazon**	480 g/L bentazon	6	Photosystem II Inhibitor	Benzothiadiazinones	no staging restrictions		X
152	**Bromoxynil**	240 - 480 g/L bromoxynil	6	Photosystem II Inhibitor	Nitriles	4 - 8 leaf, later than that, use drop nozzles		X
159	**Bromoxynil/ MCPA**	225 - 280 g/L MCPA Ester	4	Growth Regulators	Phenoxy acetic acids	4 - 6 leaf stage		X
		225 - 280 g/L bromoxynil	6	Photosystem II Inhibitor	Nitriles			
166	**Callisto 480 SC**	480 g/L mesotrione	27	HPPD Inhibition	Triketone	2 - 6 leaf stage		X
188	**Lontrel XC (only)**	600 g/L clopyralid	4	Growth Regulators	Pyridine carboxilic acid	VE - V6		X
201	**Dicamba**	350 - 600 g/L dicamba	4	Growth Regulators	Benzoic acids	up to 8" tall, use drop nozzles when taller		X
214	**Distinct**	50% dicamba	4	Growth Regulators	Benzoic acids	2 - 6 leaf stage		X
		20% diflufenzopyr	19	Auxin Inhibitor				
219	**Enlist 1**	454 g/L 2,4-D (choline salt)	4	Growth Regulators	Phenoxy acetic acids	Enlist corn-only; up to V8 or 48" tall		X

Table 5: Post-Emergent Herbicides (cont.)

Page	Herbicide	Active Ingredient	Group	Site of action	Chemical Family	Crop Staging/Timing	Weed Spectrum	
							Grassy Weeds	Broadleaf Weeds
221	**Enlist DUO**	194 g/L 2,4-D (choline salt)	4	Growth Regulators	Phenoxy acetic acids	Enlist corn-only; up to V8 or 48" tall	X	X
		204 g/L glyphosate	9	EPSP Synthase Inhibitor				
279	**Glufosinate 200 SN**	200 g/L glufosinate	10	Glutamine Synthetase Inhibitor		glufosinate-tolerant corn only: 1 - 8 leaf stage		X
281	**Glyphosate**	360 - 540 g/L glyphosate	9	EPSP Synthase Inhibitor		up to and including 8 leaf stage	X	X
336	**Laudis**	420 g/L tembotrione	27	HPPD Inhibition	Triketone	2 - 8 leaf stage	X	X
340	**MCPA**	MCPA - various formulations	4	Growth Regulators	Phenoxy acetic acids	up to 6 - 7" tall as foliar application		X
344	**MCPB/MCPA**	375 g/L MCPB 25 g/L MCPA K or Na Salt	4	Growth Regulators	Phenoxy acetic acids	18" tall to the start of VT, using drop nozzles		X
359	**Nicosulfuron**	54.55 - 75% nicosulfuron	2	ALS Enzyme Inhibitor	Sulfonylurea	1 - 8 leaf stage, VE - V6	X	
371	**Option 2.25 OD**	22.5g/L foramsulfuron	2	ALS Enzyme Inhibitor	Sulfonylurea	1 - 8 leaf stage, VE - V5	X	X
369	**Permit WG**	72.6% halosulfuron	2	ALS Enzyme Inhibitor	Sulfonylurea	1 - 10/12 leaf stage		X
421	**Rimsulfuron**	25% rimsulfuron	2	ALS Enzyme Inhibitor	Sulfonylurea	pre-emergent, post-emergent up to V2 (RRV ONLY)	X	X
431	**Shieldex**	400 g/L tolpyralate	27	HPPD Inhibition	Pyrazolone	VE - V6 or up to 50 cm tall, whichever is more restrictive	X	X
443	**Sortan IS**	20% rimsulfuron	2	ALS Enzyme Inhibitor	Sulfonylurea	pre-emergent, post-emergent up to V3	X	X
445	**Steadfast IS**	12.5% rimsulfuron	2	ALS Enzyme Inhibitor	Sulfonylurea	VE - V4	X	X
		25% nicosulfuron	2	ALS Enzyme Inhibitor	Sulfonylurea			
470	**Topramezone**	336 g/L topramezone	27	HPPD Inhibition	Pyrazolone	1 - 7 leaf stage; must be applied as a tank mix	X	X
474	**Tough EC**	600 g/L pyridate	6	Photosystem II Inhibitor	Phenyl-pyridazines	pre-plant, pre-emergent or post-emergent up to the 8-leaf stage		X
521	**Zidua**	500 g/L pyroxasulfone	15	Very Long Chain Fatty Acid Inhibitor	Chloroacetamide	pre-plant (up to 30 days), pre-emergent or post-emergent up to 4 leaf	X	X

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VEGETATIVE (V) GROWTH STAGES

Corn development is categorized into vegetative and reproductive stages. Vegetative growth refers to leaf and stalk development and elongation. The vegetative stage is broken down into subdivisions, mainly identified numerically.

VE: EMERGENCE

VE is defined as the stage where the coleoptile has emerged from the soil until just prior to the first leaf collaring.

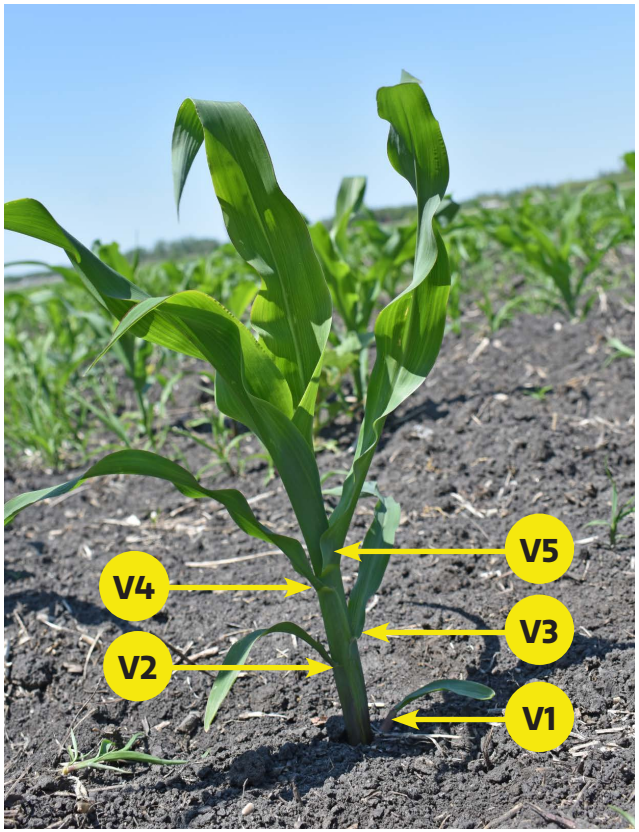
V1: ONE LEAF COLLAR

This stage is only defined once the first leaf collar is fully visible. The first true leaf of a corn plant is the only leaf to be rounded at the tip and is included when counting leaf collars for the full vegetative growth period.

V2: TWO LEAF COLLARS

Two leaf collars are fully visible. This second true leaf will have a pointed tip that is typical in corn plants. All leaves moving forward will bear the same resemblance.

VEGETATIVE (V) GROWTH STAGES

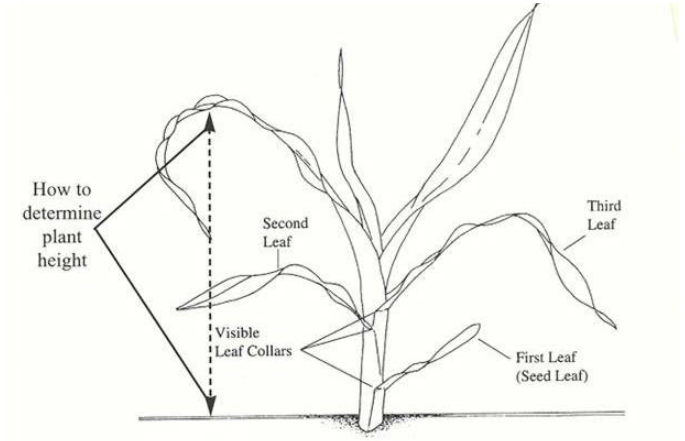


V3, V4, V5, ...Vn: LEAF COLLARS

Vn, where 'n' represents the last stage before VT (tasseling).

VT: TASSELING

When the tassel is fully emerged and extended, no longer being held in by the upper plant leaves. A corn plant remains in VT stage until any of the silk extends past the husk. This means that pollen shed can begin, even prior to entering the reproductive growth stages.



ALTERNATE METHODS OF STAGING VEGETATIVE CORN

LEAF TIP METHOD:

Count all leaves, including any leaf tips that have emerged from the whorl at the top of the plant. In the image shown, the corn plant is 6-leaf, according to the leaf tip method.

LEAF OVER METHOD:

Count the number of leaves, starting from the lowest leaf (the coleoptile leaf with a rounded tip) to the last leaf that is arched over (tip pointing down). Younger leaves that are standing straight up are not counted. In the image shown, the corn plant is 4-leaf, according to the leaf over method.

LEAF HEIGHT METHOD:

Measure from soil level to the arch of the last leaf that is fully arched over. Height is usually measured in inches when referring to herbicide applications.

NOTE:

When considering a herbicide application that does not clearly state which leaf counting method is used on the label, always contact the corresponding chemical company.

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CONNECT WITH US

mbcropalliance.ca

hello@mbcropalliance.ca

P: 204.745.6661

@mb_cropalliance

FUNDING ACKNOWLEDGMENTS

Manitoba Crop Alliance gratefully acknowledges the funding support from the Government of Manitoba & Government of Canada through the CAP-Ag Action Manitoba program.