

# EASTERN CANADA 2020 SEED GUIDE



syngenta®





## SOYBEANS

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2020 variety characteristics	3
Population recommendations by management zone	7
Variety positioning	8
Description key	12
Roundup Ready 2 Xtend® varieties	13
Genuity® Roundup Ready 2 Yield® varieties	15
Conventional varieties	16
Syngenta soybean portfolio	17
Syngenta soybean Seedcare™	19
Fortenza® Vibrance® Maxx	20

## CORN

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<b>NEW!</b> Agrisure Duracade®	21
Corn trait index	23
Agrisure Viptera®	24
Description key	26
Agronomic characteristics	27
2020 hybrids	29
Syngenta corn portfolio	31
Syngenta corn Seedcare	33

## STEWARDSHIP

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Protecting pollinators	34
Syngenta best management practices	35
Notes	37
Treat Right	40

### Variety characteristics



ROUNDUP READY 2 XTEND®

	PRODUCT	MATURITY		AGRONOMIC/PLANT CHARACTERISTICS						
		Variety	Relative maturity	CHU	Emergence score	Standability	Wide row	Plant height	Canopy index	Hilum colour
2000–3000 CHU	S01-C4X	0.1	2525	3	3	2	MT	5.6	BL	M
	S05-N5X <b>NEW</b>	0.5	2675	3	2	3	MS	3.6	BR	M
	S07-K5X	0.7	2700	1	3	2	M	4.6	GR	L
	S09-C3X	0.9	2775	3	4	1	M	5.9	BL	L
	S09-R8X	0.9	2775	3	4	2	MT	5.6	IMY	M
	S12-P3X	1.2	2825	3	3	2	M	4.9	BR	M
	S14-B2X	1.4	2850	4	2	2	M	4.6	BL	M
	S14-U9X <b>NEW</b>	1.4	2850	3	2	3	MT	4.9	BR	M
	S18-G4X	1.8	2925	3	2	1	MT	5.6	BL	L
	S18-H3X	1.8	2925	2	2	2	M	4.9	BL	L
> 3000 CHU	S20-L8X	2.0	3025	2	3	2	M	4.9	BL	L
	S22-J4X	2.2	3075	3	3	2	M	4.9	BL	L
	S25-B6X	2.5	3150	3	3	1	MT	7.2	BR	M
	S27-M8X	2.7	3225	3	2	1	MS	4.9	IMB	M
	S27-U2X	2.7	3225	2	4	1	M	5.6	BL	L
	S29-R5X	2.9	3275	2	4	1	MT	6.6	BR	M
	S31-Y2X	3.1	3300	3	3	2	M	4.9	BL	L

Performance results are based on North American field trials and are not necessarily consistent with Eastern Canadian recommendations on pages 7-10.



## Soybean chart key

### Relative maturity

First number indicates maturity group, second set of numbers indicates within-group maturity rating on a 0–9 scale (0 = Early, 9 = Late).

### Agronomic and disease ratings

1–3 = Excellent                      4–6 = Average  
7–9 = Poor                              – = Under evaluation

### Plant height

S = Short  
MS = Medium Short  
M = Medium  
MT = Medium Tall  
T = Tall

### Canopy index

Index is calculated using plant height, width and branching characteristics. The larger the number, the larger the plant.

### Colour abbreviations

BF = Buff, BR = Brown, BL = Black, GR = Grey  
IMB = Imperfect Black, Y = Yellow, IMY = Imperfect Yellow

### Seed size

VL = Very Large = <2000 seeds/lb or <4400 seeds/kg  
L = Large = 2000–2275 seeds/lb or 4400–5000 seeds/kg  
M = Medium = 2275–2725 seeds/lb or 5000–6000 seeds/kg  
S = Small = >2725 seeds/lb or >6000 seeds/kg

### Protein rating

Average = <40%  
High = 40–43%  
Very high = >43%

### Oil rating

Average = <22%  
High = 22–23%  
Very high = >23%

Protein values fluctuate from year to year and field to field

### Resistance rating system

Indicates when a variety is resistant to a specific disease or pest. For varieties with soybean cyst nematode (SCN) resistance, it is specified which races of nematodes the line is resistant to. In the case of Phytophthora, it indicates the gene conveying the resistance.

### Soybean cyst nematode (SCN)

1, 3, 5 and/or 14 = Specific race of soybean cyst nematode  
R = Resistant, MR = Moderately Resistant, S = Susceptible

### Phytophthora race resistance

The following information correlates gene resistance to the actual races of Phytophthora the plant is protected from:

S = Susceptible

Rps1a = Resistant to races

1, 2, 10, 11, 13–18, 24, 26, 27, 31, 32, 36, 38

Rps1c = Resistant to races

1–3, 6–11, 13, 15, 17, 21, 23, 24, 26, 28–30, 32, 34, 36, 38, 44

Rps1k = Resistant to races

1–11, 13–15, 17, 18, 21–24, 26, 36–38, 44

Rps3a = Resistant to races

1–5, 8, 9, 11, 13, 14, 16, 18, 23, 25, 28, 29, 31–35, 39, 44, 45

Rps6 = Resistant to races

1–4, 8, 9, 10, 12, 14–16, 18–21, 25, 28, 33–35, 38, 39, 44, 45

### Phytophthora field tolerance

Usually not as complete as race-specific resistance, but it offers general protection. Resistance is not expressed in early stages of plant development. Numerical rating scale of 1–9;

1 = Excellent, 9 = Poor

### Adaptation ratings

★ Above average performance

● Average performance

▼ Variety may not perform consistently

✘ Variety not recommended

GRAIN QUALITY		DISEASES/PESTS							GENERAL ADAPTATION			
Protein ratings	Oil ratings	Soybean cyst nematode	PHYTOPHTHORA		Sclerotinia white mould	Sudden death syndrome	Pod and stem blight	Drought prone soil	Highly productive soils	Variable environments	Poorly drained soils	
			Gene resistance	Field tolerance								
High	High	S	Rps1c	2	3	-	4	●	★	●	●	
High	High	S	Rps1c,Rps3a	3	3	-	2	●	★	●	●	
Very high	Average	S	Rps3a	3	3	-	4	●	●	★	●	
Very high	Average	R3	Rps1c	3	4	-	3	●	●	●	●	
High	Average	R3,MR14	Rps1c	4	4	3	5	★	★	★	●	
High	High	MR3	Rps1k	2	2	3	4	▼	●	●	▼	
High	Very high	R3,MR14	Rps1c	3	3	3	2	●	▼	★	★	
High	High	MR3,MR14	Rps1c	2	3	3	2	●	★	●	▼	
High	Very high	R3,MR14	Rps1c	3	6	2	2	●	●	★	★	
High	High	R3,MR14	S	2	3	2	3	●	●	●	●	
High	High	R3,MR14	Rps1c	4	2	3	3	●	▼	●	▼	
High	High	R3,MR14	Rps1c	4	3	3	3	▼	●	▼	★	
High	High	R3,MR14	Rps1c	4	3	4	4	●	●	★	★	
Average	High	R3,MR14	Rps1c	4	4	2	3	●	★	●	★	
High	Average	R3,MR14	Rps1k	2	4	2	3	▼	●	▼	●	
Average	High	R1,R3,MR5	Rps1k	2	4	3	2	●	★	★	★	
High	Average	R3,MR14	Rps1c	4	3	3	2	●	●	●	★	



### Discover your next top performer

Explore how soybean varieties perform under local conditions with the Trial Results tool.

We know yield data is a key factor in your variety and hybrid selection process. That's why we created the Trial Results tool, giving you the performance insights you need to make the right choice for your farm.



Visit:  
[syngenta.ca/trialresults](http://syngenta.ca/trialresults)

-  Select your crop and variety or hybrid, and confirm your location to find plots near you
-  Choose a plot to check yield results and plot information

### Variety characteristics



#### GENUITY® ROUNDUP READY 2 YIELD®

PRODUCT	MATURITY		AGRONOMIC/PLANT CHARACTERISTICS							
	Relative maturity	CHU	Emergence score	Standability	Wide row	Plant height	Canopy index	Hilum colour	Seed size	
2000–2650 CHU	Variety									
	S0009-M2	0.009	2275	3	4	4	M	3.3	IMY	S
	S007-Y4	0.05	2350	3	2	2	MS	3.9	IMY	M
	S008-N2	0.08	2450	3	3	1	MT	6.2	IMY	M
	S04-D3	0.4	2650	3	2	4	M	4.2	BL	M
	S10-S1	1.0	2800	3	2	2	M	4.9	BR	M
> 2800 CHU	S14-A6	1.4	2850	1	2	3	MS	3.9	BL	M



#### CONVENTIONAL

PRODUCT	MATURITY		AGRONOMIC/PLANT CHARACTERISTICS							
	Relative maturity	CHU	Emergence score	Standability	Wide row	Plant height	Canopy index	Hilum colour	Seed size	
2650–2900 CHU	Variety									
	S03-W4	0.3	2650	2	2	3	M	2.6	IMY	L
	S07-D2	0.7	2700	1	4	3	T	4.2	Y	L
	S07-M8	0.7	2725	2	1	3	MT	3.6	IMY	L
	S10-R2	1.0	2800	3	5	1	T	7.2	Y	L
	S12-J7 <b>NEW</b>	1.2	2825	2	3	2	M	4.3	Y	VL
	S14-H3	1.4	2850	3	2	4	M	4.9	IMY	VL
	S16-F5	1.6	2875	3	2	4	M	4.9	Y	L
	S18-R6	1.8	2900	4	1	3	T	3.9	Y	L
	S20-G7	2.0	3000	2	3	2	MT	4.9	Y	L
> 3000 CHU	S20-M1 <b>NEW</b>	2.0	3000	2	4	2	MT	4.6	Y	M
S21-C3	2.1	3050	2	3	1	MT	5.2	Y	M	

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Turn page to see the soybean chart key



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Average = <40%  
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### Oil rating

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Protein values fluctuate from year to year and field to field

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1–3, 6–11, 13, 15, 17, 21, 23, 24, 26, 28–30, 32, 34, 36, 38, 44

Rps1k = Resistant to races

1–11, 13–15, 17, 18, 21–24, 26, 36–38, 44

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1–5, 8, 9, 11, 13, 14, 16, 18, 23, 25, 28, 29, 31–35, 39, 44, 45

Rps6 = Resistant to races

1–4, 8, 9, 10, 12, 14–16, 18–21, 25, 28, 33–35, 38, 39, 44, 45

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### Adaptation ratings

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- Average performance
- ▼ Variety may not perform consistently
- ✘ Variety not recommended

GRAIN QUALITY		DISEASES/PESTS							GENERAL ADAPTATION			
Protein ratings	Oil ratings	Soybean cyst nematode	PHYTOPHTHORA		Sclerotinia white mould	Sudden death syndrome	Pod and stem blight	Drought prone soil	Highly productive soils	Variable environments	Poorly drained soils	
			Gene resistance	Field tolerance								
High	Very high	S	Rps6	3	3	-	3	●	★	●	●	
High	High	S	Rps1c	3	2	-	5	●	★	★	●	
High	Very high	S	S	4	4	-	4	●	●	★	●	
High	High	S	Rps1c	3	2	-	2	●	★	●	●	
High	Average	R3,R14	Rps1k,Rps3a	3	3	-	3	●	★	●	●	
High	High	R3,MR14	Rps1k	3	4	3	4	▼	★	★	★	

GRAIN QUALITY		DISEASES/PESTS							GENERAL ADAPTATION			
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			Gene resistance	Field tolerance								
Very high	High	S	Rps1c	2	3	-	3	●	★	●	★	
Very high	Average	S	Rps3a	2	2	-	5	●	★	▼	▼	
Very high	High	S	Rps1c	3	2	-	3	●	★	●	●	
Very high	Average	R3	S	3	5	-	5	●	▼	●	★	
Very high	High	MR3,MR14	Rps1c,Rps3a	2	3	-	4	●	★	★	★	
Very high	Average	MR3	S	3	3	-	4	●	★	●	●	
Very high	Average	R3,MR14	Rps1c	3	4	3	4	▼	★	▼	●	
High	High	R3,MR14	Rps1a	4	2	-	3	★	★	▼	●	
Very high	Average	S	Rps1c	3	2	-	4	▼	★	●	▼	
High	Average	R3,R14	Rps1c	3	-	4	6	★	★	★	●	
High	Average	R3	Rps1c	4	4	3	5	★	★	●	▼	



### Choosing genetics is the first step to high soybean yields

There's no perfect soybean variety, but if growers choose the best genetics for their field environment, that management decision will help deliver yield.

Learn more at:  
[Syngenta.ca/choosinggenetics](https://www.syngenta.ca/choosinggenetics)



## Population recommendations by management zone



VARIETY PLANT TYPES		
Thin	Between	Branching
	S01-C4X	
S05-N5X	S07-K5X	
	S09-R8X	S09-C3X
	S12-P3X	
	S14-B2X	
	S14-U9X	
	S18-H3X	S18-G4X
	S20-L8X	
	S22-J4X	
		S25-B6X
	S27-M8X	S27-U2X
		S29-R5X
	S31-Y2X	



VARIETY PLANT TYPES		
Thin	Between	Branching
S0009-M2		
	S007-Y4	
	S008-N2	
S04-D3		
	S10-S1	
	S14-A6	



VARIETY PLANT TYPES		
Thin	Between	Branching
S03-W4		
S07-D2		
S07-M8		S10-R2
	S12-J7	
	S14-H3	
	S16-F5	
S18-R6		
	S20-M1	
	S20-G7	
	S21-C3	

**Thin** varieties have a row width of 15" or less

**Between** varieties can be managed to act either thin or branching

**Branching** varieties have a row width of 20" or greater

YIELD ENVIRONMENT (BU/AC)				
Soil type	Plant type	> 60	40-60	< 40
Sand	Thin	150,000	175,000	200,000
	Branching	120,000	150,000	180,000
Clay	Thin	180,000	200,000	225,000
	Branching	140,000	165,000	190,000
Loam	Thin	160,000	180,000	200,000
	Branching	100,000	125,000	150,000

#### Increase population by 10% over recommendations if:

- Field has poor drainage and history of early season establishment issues
- Field has history of soil crusting and early season establishment issues
- Planting soybeans later in the season (after June 15<sup>th</sup>)

#### Decrease population by 10-20% under recommendations if:

- Field has a high risk or history of Sclerotinia white mould

#### Row width considerations:

- Consider selecting branching type soybeans for rows 20" or greater to help ensure maximum canopy closure

Population recommendations and variety positioning performance ratings are based on Eastern Canadian field trials and are not necessarily representative of the North American data provided on pages 3-6.





## Genetics x Environment x Management = High-yielding soybeans



### Genetics

**Seed:** Select high-performing seed bred for local conditions.

**SCN protection:** Guard against yield loss with pest-resistant seed.

X



### Environment

**Pest management:** Protect crops against weeds, pests and diseases.

**Soil type:** Understand and optimize soil type.

**Weather:** Prepare for and respond to specific weather conditions.

X



### Management

**Fertility:** Monitor crop nutrition and take appropriate action.

**Stand establishment:** Make Seedcare™ and planting decisions to start off strong.

**Equipment:** Calibrate precision equipment for peak performance.

**Harvest management:** Maximize yield through timing and equipment.

## Sclerotinia white mould

- Top yield-robbing disease in soybeans, with losses of up to 75%.
- Our research capabilities help ensure growers have excellent solutions to Sclerotinia white mould.

### How to manage:

- Select genetics with excellent tolerance where possible.
- In fields with Sclerotinia white mould history and high-risk environments, reduce populations by 10% for varieties with an "Excellent" rating and up to 20% for varieties with an "Average" rating.
- Consider applying Allegro® fungicide as part of a Sclerotinia white mould IPM strategy.



Excellent		Average
S01-C4X	S20-L8X	S09-C3X
S05-N5X	S22-J4X	S09-R8X
S07-K5X	S25-B6X	S18-G4X
S12-P3X	S31-Y2X	S27-M8X
S14-B2X		S27-U2X
S14-U9X		S29-R5X
S18-H3X		

Excellent	Average
S0009-M2	S008-N2
S007-Y4	S14-A6
S04-D3	
S10-S1	

Excellent	Average
S03-W4	S10-R2
S07-D2	S16-F5
S07-M8	S21-C3
S12-J7	
S14-H3	
S18-R6	
S20-G7	

### Pod and stem blight

- Small black raised dots (pycnidia) often in rows on the stem and no pattern on the pods.
- Fungus overwinters in seed and crop residue.
- Warm, wet or humid weather during pod fill favours disease development.

#### How to manage:

- Variety selection
- Fungicide application
- Residue management
- Consider adding Mertect® SC to your seed treatment selection



Excellent		Average
S05-N5X	S22-J4X	S01-C4X
S14-B2X	S27-M8X	S07-K5X
S14-U9X	S27-U2X	S09-C3X
S18-G4X	S29-R5X	S09-R8X
S18-H3X	S31-Y2X	S12-P3X
S20-L8X		S25-B6X



Excellent	Average
S0009-M2	S007-Y4
S04-D3	S008-N2
	S10-S1
	S14-A6



Excellent	Average
S03-W4	S07-D2
S07-M8	S10-R2
S18-R6	S12-J7
	S14-H3
	S16-F5
	S20-G7
	S20-M1
	S21-C3

### Sudden death syndrome (SDS)

- Caused by the fungal disease *Fusarium virguliforme*.
- Potentially linked with soybean cyst nematode (SCN), as nematode feeding allows the entry of secondary pathogens.
- Leaf symptoms caused by toxins produced by the fungus.

#### How to manage:

- Choose varieties with SCN resistance
- Apply Vibrance® Maxx/Cruiser Maxx® Vibrance® Beans + Clariva® pn\* + Mertect SC

\*Clariva pn is only for protection against soybean cyst nematode.



Excellent		Average
S09-R8X	S20-L8X	S07-K5X
S12-P3X	S22-J4X	S09-C3X
S14-B2X	S27-M8X	S25-B6X
S14-U9X	S27-U2X	
S18-G4X	S29-R5X	
S18-H3X	S31-Y2X	



Excellent
S14-A6



Excellent	Average
S14-H3	S20-G7
S16-F5	
S18-R6	
S20-M1	
S21-C3	

Population recommendations and variety positioning performance ratings are based on Eastern Canadian field trials and are not necessarily representative of the North American data provided on pages 3-6.



## Brown stem rot (BSR)

- Pathogen survives in crop debris.
- Infection occurs early in the season but foliar symptoms appear when pods begin to fill (R3-R4).
- Pith will show brown discolouration.

### How to manage:

- Rotation
- Residue management
- Variety selection



Excellent		Average	
S01-C4X	S09-C3X	S20-L8X	
S07-K5X	S09-R8X	S22-J4X	
S14-B2X	S12-P3X	S25-B6X	
S27-M8X	S18-G4X	S29-R5X	
S27-U2X	S18-H3X	S31-Y2X	



Excellent	Average
S10-S1	S0009-M2
S14-A6	S007-Y4
	S008-N2
	S04-D3



Excellent	Average
S10-R2	S14-H3
	S16-F5

## Phytophthora root rot (PRR)

- Caused by soil-borne pathogen *Phytophthora sojae*.
- Most common on poorly drained soils.
- Can infect at all plant stages when conditions favour the pathogen.
- Symptoms usually become apparent two weeks after heavy rains.
- Genetic selection against PRR should include major genes – Rps genes and field tolerance.

### How to manage:

- Vibrance Maxx RFC/Cruiser Maxx Vibrance Beans (consider tank-mixing with Apron XL® LS\*)
- Variety selection
- Improve soil drainage



Excellent		Average	
S01-C4X	S14-U9X	S09-R8X	
S05-N5X	S18-G4X	S20-L8X	
S07-K5X	S18-H3X	S22-J4X	
S09-C3X	S27-U2X	S25-B6X	
S12-P3X	S29-R5X	S27-M8X	
S14-B2X	S31-Y2X		



Excellent	Average
S0009-M2	
S007-Y4	
S008-N2	
S04-D3	
S10-S1	
S14-A6	



Excellent		Average
S03-W4	S14-H3	S18-R6
S07-D2	S16-F5	S21-C3
S07-M8	S20-G7	
S10-R2	S20-M1	
S12-J7		

\* Tank mix if target fields have a history of high Phytophthora pressure, or susceptible varieties are to be treated. Tank mix either 100 mL of Vibrance Maxx RFC or 195 mL of Cruiser Maxx Vibrance Beans Seed Treatment with 31 mL of Apron XL LS Fungicide per 100 kg of seed.






## Description key

Ratings are based on field observations collected by Syngenta from multiple locations over multiple years. They represent comparisons with company products only.

### Relative maturity: 0.1:

A relative maturity (RM) system is used to rank soybeans. Each variety is classified with a 0 to 9 decimal number following the group (or zone) number. For example, a variety with a 2.1 RM can be grown in the northern part of the "II" relative maturity zone, while a 2.9 is a variety that can be grown in the southern part of that maturity zone.

RM 0.1	<h1>S01-C4X</h1>  <ul style="list-style-type: none"> <li>• Excellent performance across most soil types</li> <li>• Good plant height, even when moved south of zone</li> <li>• Rps1c with excellent field tolerance to Phytophthora root rot</li> </ul>
CHU 2525	

CHU: 2525: Specific crop heat units for this product.

## Soybean index



### Roundup Ready 2 Xtend® soybeans

NK® soybean varieties bred with Roundup Ready 2 Xtend® trait technology are tolerant to both glyphosate (Group 9) and dicamba (Group 4) herbicides, allowing growers to use multiple modes of action to help manage tough-to-control weeds, including glyphosate-resistant giant ragweed, common ragweed, and Canada fleabane.



### Genuity® Roundup Ready 2 Yield® soybeans

NK soybean varieties bred with Syngenta genetics and the Genuity® Roundup Ready 2 Yield® trait technology are tolerant to glyphosate (Group 9) herbicides.




### Soybean cyst nematode solutions


These varieties exhibit some manner of resistance to a specific race of soybean cyst nematode.





### Conventional soybeans


Conventional, identity-preserved soybean varieties from NK have a reputation for quality, are trusted by processors, and give growers a competitive edge in Canadian and international markets.


RM 0.1	<b>S01-C4X</b>	
CHU 2525	<ul style="list-style-type: none"> <li>• Excellent performance across most soil types</li> <li>• Good plant height, even when moved south of zone</li> <li>• Rps1c with excellent field tolerance to Phytophthora root rot</li> </ul>	


RM 1.2	<b>S12-P3X</b>	
CHU 2825	<ul style="list-style-type: none"> <li>• Consistent, top-end yield performance</li> <li>• Exciting Sclerotinia white mould tolerance, additionally supported by genetic background</li> <li>• Distinguishing Phytophthora root rot field tolerance and Rps1k gene</li> </ul>	


<b>NEW</b>	RM 0.5	<b>S05-N5X</b>	
	CHU 2675	<ul style="list-style-type: none"> <li>• Unique Rps1c/3a gene stack with strong Phytophthora field tolerance</li> <li>• Strong tolerance to Sclerotinia white mould</li> <li>• Very good performance across a range of soil types</li> </ul>	


RM 1.4	<b>S14-B2X</b>	
CHU 2850	<ul style="list-style-type: none"> <li>• Strong tolerance to Sclerotinia white mould and sudden death syndrome</li> <li>• Very good field tolerance with Rps1c gene for resistance to Phytophthora root rot</li> <li>• Good stress tolerance for the less productive acre</li> </ul>	


RM 0.7	<b>S07-K5X</b>	
CHU 2700	<ul style="list-style-type: none"> <li>• Desired Rps3a Phytophthora root rot gene</li> <li>• Tall plant with excellent standability</li> <li>• Strong Sclerotinia white mould tolerance</li> </ul>	

<b>NEW</b>	RM 1.4	<b>S14-U9X</b>	
	CHU 2850	<ul style="list-style-type: none"> <li>• Performs well across a range of soil types</li> <li>• Very good tolerance to sudden death syndrome and Sclerotinia white mould</li> <li>• Rps1c gene with excellent field tolerance to Phytophthora root rot</li> </ul>	

RM 0.9	<b>S09-C3X</b>	
CHU 2775	<ul style="list-style-type: none"> <li>• Taller plant with good branching to quickly fill in rows</li> <li>• Solid disease package</li> <li>• Flexibility to grow north and south of zone</li> </ul>	

RM 1.8	<b>S18-G4X</b>	
CHU 2925	<ul style="list-style-type: none"> <li>• Very good standability</li> <li>• Rps1c Phytophthora gene with solid emergence across multiple soil types</li> <li>• Very good stress tolerance</li> </ul>	

RM 0.9	<b>S09-R8X</b>	
CHU 2775	<ul style="list-style-type: none"> <li>• Performs well regardless of soil type, yield environment, or geography</li> <li>• Rps1c with above-average tolerance to Phytophthora root rot</li> <li>• Good pod height for easy harvest</li> </ul>	

RM 1.8	<b>S18-H3X</b>	
CHU 2925	<ul style="list-style-type: none"> <li>• Must-have for sudden death syndrome and Sclerotinia white mould</li> <li>• Excellent agronomic choice for any row spacing</li> <li>• True 1.8 maturity for early harvest planning when growers need it</li> </ul>	







RM 0.3	<b>S03-W4</b>	
CHU 2650	<ul style="list-style-type: none"> <li>• Excellent disease package for dependable performance</li> <li>• High yield and export demand</li> <li>• Consistent performer in most soil types and tillage systems</li> </ul>	

RM 1.6	<b>S16-F5</b>	SCN SOLUTIONS
CHU 2875	<ul style="list-style-type: none"> <li>• Responds to highly productive, well-drained soil types</li> <li>• Very strong standability for ease of harvest</li> <li>• Medium plant height with a medium canopy</li> </ul>	

RM 0.7	<b>S07-D2</b>	
CHU 2700	<ul style="list-style-type: none"> <li>• Unique plant type that is adapted to narrow rows</li> <li>• Strong agronomics including Sclerotinia white mould tolerance</li> <li>• Rps3a with good field tolerance of Phytophthora root rot</li> </ul>	

RM 1.8	<b>S18-R6</b>	SCN SOLUTIONS
CHU 2900	<ul style="list-style-type: none"> <li>• Excellent stress tolerance</li> <li>• Excellent Sclerotinia white mould tolerance</li> <li>• Broadly adapted to most tillage systems and soil types</li> </ul>	

RM 0.7	<b>S07-M8</b>	
CHU 2725	<ul style="list-style-type: none"> <li>• Tall plant type with very good standability</li> <li>• Rps1c with average field rating for Phytophthora root rot</li> <li>• Developed with Sclerotinia white mould tolerance</li> </ul>	

RM 2.0	<b>S20-G7</b>	
CHU 3000	<ul style="list-style-type: none"> <li>• Above average protein and large seed size for the export market</li> <li>• Solid agronomics that include Sclerotinia white mould tolerance</li> <li>• Medium-tall plant with a thin canopy type</li> </ul>	

RM 1.0	<b>S10-R2</b>	SCN SOLUTIONS
CHU 2800	<ul style="list-style-type: none"> <li>• Tall, bushy plant type that canopies quickly</li> <li>• Excellent yields on tough acres</li> <li>• Great root disease protection package for early season start</li> </ul>	

NEW	RM 2.0	<b>S20-M1</b>	SCN SOLUTIONS
	CHU 3000	<ul style="list-style-type: none"> <li>• Noticeable speed of emergence and vigour allow for broad placement, including on tough acres</li> <li>• Maintains height allowing for placement south of zone</li> <li>• Excellent food-grade qualities including yellow hilum with above average protein and sugars</li> </ul>	

NEW	RM 1.2	<b>S12-J7</b>	SCN SOLUTIONS
	CHU 2825	<ul style="list-style-type: none"> <li>• Performs across a range of soil types, allowing for ease of placement</li> <li>• Strong soybean cyst nematode protection and desired Rps3a Phytophthora root rot gene stack</li> <li>• Exceptional food-grade qualities to drive higher premiums</li> </ul>	






RM 2.1	<b>S21-C3</b>	SCN SOLUTIONS
CHU 3050	<ul style="list-style-type: none"> <li>• Tall, vigorous plant type</li> <li>• Rps1c and good emergence for no-till acres</li> <li>• Excellent companion product with S20-G7</li> </ul>	

RM 1.4	<b>S14-H3</b>	SCN SOLUTIONS
CHU 2850	<ul style="list-style-type: none"> <li>• Soybean cyst nematode protection for critical maturity</li> <li>• Attractive field appearance with excellent standability</li> <li>• Well adapted across variable yield environments</li> </ul>	

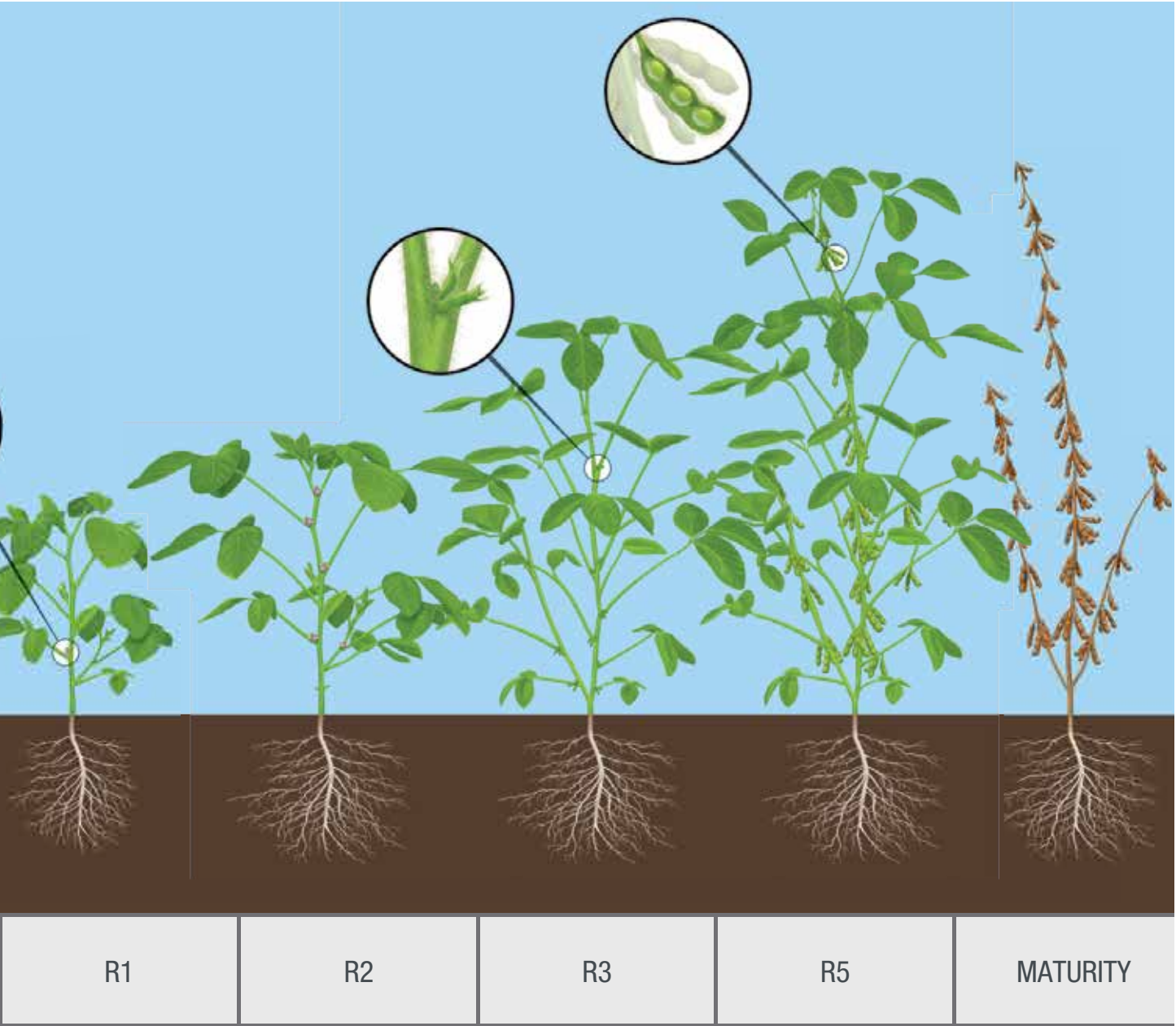
# SOYBEANS

## SYNGENTA SOYBEAN PORTFOLIO



SEED	PE	VC	V1	V2
	 			
<p>Fortenza<sup>®</sup> Vibrance<sup>®</sup> Maxx OR CruiserMaxx<sup>®</sup> Vibrance<sup>®</sup> Beans OR Vibrance<sup>®</sup> Maxx RFC AND Clariva<sup>®</sup> pn AND/OR Mertect<sup>®</sup></p>				

<sup>1</sup>Tavium Plus VaporGrip<sup>®</sup> Technology is for Roundup Ready 2 Xtend<sup>®</sup> soybeans only. <sup>2</sup>Flexstar GT is for glyphosate-tolerant soybeans only.










Endigo®

Allegro®

Trivapro™

### Protect your seed

Syngenta offers several seed treatment options to meet the needs of your farm while supporting sustainable practices that help preserve the environment.

	INSECTS CONTROLLED	DISEASES CONTROLLED	
	<ul style="list-style-type: none"> <li>• European chafer</li> <li>• June beetle</li> <li>• Seed corn maggot</li> <li>• Wireworm</li> <li>• Bean leaf beetle</li> <li>• Black cutworm</li> </ul>	<ul style="list-style-type: none"> <li>• Seed rot</li> <li>• Seedling blight</li> <li>• Pre- and post-emergence damping-off</li> <li>• Early-season root rot on Phytophthora-tolerant varieties</li> </ul>	
	<ul style="list-style-type: none"> <li>• Bean leaf beetle</li> <li>• European chafer</li> <li>• Seed corn maggot</li> <li>• Wireworm</li> <li>• Soybean aphid</li> </ul>	<ul style="list-style-type: none"> <li>• Seed rot</li> <li>• Seedling blight</li> <li>• Pre- and post-emergence damping-off</li> <li>• Early-season root rot on Phytophthora-tolerant varieties</li> </ul>	 Includes Vigor Trigger®
		<ul style="list-style-type: none"> <li>• Seed rot</li> <li>• Seedling blight</li> <li>• Pre- and post-emergence damping-off</li> <li>• Early-season root rot on Phytophthora-tolerant varieties</li> </ul>	
		<ul style="list-style-type: none"> <li>• Early-season root rot on Phytophthora-tolerant varieties</li> </ul>	

## Fortenza® Vibrance® Maxx

### Protect your soybean seed from both below- and above-ground insect feeding and seed- and soil-borne diseases.

Fortenza® Vibrance® Maxx is a non-neonicotinoid soybean seed treatment. It delivers control of below-ground pests such as European chafer, June beetle, wireworm and seed corn maggot, as well as above-ground pests such as bean leaf beetle and black cutworm. It also helps protect growing soybean seedlings from early season seed- and soil-borne disease. A Fortenza Vibrance Maxx seed treatment helps build a strong soybean stand, even under heavy insect and disease pressure, producing faster, more uniform growth.

Fortenza Vibrance Maxx can be used with most Rhizobium-based inoculants.

Helping hands when  
and where you need  
them the most.



 **Fortenza**® **Vibrance**® **Maxx**

syngenta®

An aerial photograph of a vast cornfield. A dirt path winds through the center of the field, leading towards a small building and a red tractor in the distance. A person in a plaid shirt and jeans is walking away from the camera down the path. The corn plants are arranged in neat, curved rows, creating a sense of depth and perspective. The overall scene is bright and green, suggesting a healthy crop.

# A NEW DIMENSION OF INSECT CONTROL.

**Give your field something different.** With a unique mode of action that delivers best-in-class performance, Agrisure Duracade® trait stacks provide industry-leading above- and below-ground insect control. Make the switch and experience the Agrisure Duracade difference.

**Visit [Syngenta.ca/Agrisure-Duracade](http://Syngenta.ca/Agrisure-Duracade).**

 **AgrisureDuracade®**

**syngenta®**

# AgrisureDuracade®

Agrisure Duracade® is the newest rootworm trait and is always stacked with a second, proven mode of action. Agrisure Duracade will be available in two trait stacks, each with dual modes of corn rootworm control and integrated E-Z Refuge® in a bag.

## Corn rootworm control



Agrisure Duracade expresses a protein with a unique binding site in the gut of the corn rootworm, reducing pressure on the corn seedling and helping hybrids develop a stronger, more robust root system that supplies your plants with optimal water and nutrient uptake. Stronger roots lead to healthier plants that stand all season long, helping to realize the crop’s genetic yield potential and increase profit opportunities.



Agrisure Duracade, Ridgetown, ON, July 28<sup>th</sup>, 2017



Non-Agrisure Duracade, Ridgetown, ON, July 28<sup>th</sup>, 2017

	DESCRIPTION	E-Z REFUGE	TYPE OF INSECTS CONTROLLED <sup>1</sup>
	The most advanced trait stack on the market, offering premium, broad-spectrum control. Agrisure Duracade controls 16 damaging insects, including corn rootworm. It also features the Agrisure Viptera® trait – the only trait available today that effectively controls western bean cutworm.	✓	Above- and below-ground insects
	Effective, season-long control to protect your corn from above- and below-ground insects. The combination of Agrisure Duracade and Agrisure® rootworm traits provide dual modes of action against corn rootworm.	✓	Above- and below-ground insects

<sup>1</sup>Consult Syngenta.ca for a complete list of insects controlled.

### Corn trait index

#### **Agrisure Viptera®**

Agrisure Viptera® is the first vegetative insecticidal protein in corn and is the only trait currently available that effectively controls western bean cutworm. It also protects the crop from key above-ground insects like corn earworm, cutworm and armyworm.




#### **Western bean cutworm control**

Western bean cutworm is native to North America and has progressively spread through Ontario and Quebec. Masses of up to 200 eggs are laid on the plant leaves, so populations can grow quickly.


Agrisure Viptera relies on a unique vegetative insecticidal protein (VIP) that binds to a receptor site in the lining of the western bean cutworm’s mid-gut. Because VIP targets this site, rather than the sites traditionally targeted by crystal (cry) proteins, Agrisure Viptera delivers a high dose kill, making it the most effective trait for control of western bean cutworm.

#### **Agrisure Artesian®**

Agrisure Artesian includes scientifically selected genes for water optimization and drought tolerance. It maximizes yield when it rains and increases yield up to 15% when it doesn’t. Hybrids with the Agrisure Artesian trait are tolerant to glyphosate.

	DESCRIPTION	E-Z REFUGE	TYPE OF INSECTS CONTROLLED*
	Unsurpassed control of broad lepidopteran pests and corn borer with two modes of action and integrated E-Z Refuge. Tolerant to glyphosate.		Above-ground insects
	Excellent control of above-ground insects where corn rootworm is not a key problem. This trait stack provides tolerance to glyphosate and glufosinate.		Above-ground insects

\* Consult Syngenta.ca for a complete list of insects controlled.



If you only see one...  
It's already too late.

Protect your crop with Agrisure Viptera® – the only trait that provides effective control of western bean cutworm. It also protects the crop from key insects like corn earworm, cutworm and armyworm, for the most comprehensive above-ground insect control available. Discover why Agrisure Viptera is worth a closer look at [Syngenta.ca/Agrisure-Viptera](http://Syngenta.ca/Agrisure-Viptera).

 **Agrisure Viptera**®

**syngenta**®



## Description key



## The Agrisure naming system

To convey the characteristics of the various Agrisure trait stacks, we've created a consistent, straightforward naming system.

**Master brand:** Agrisure

**Brand suffix:** Changes as new technologies are introduced

**Technology series:** The first number in the trait name indicates the technology series

**Insect control traits:** The next three numbers indicate how many modes of action are included in the trait stack to control each of the listed insects.

- 1) Broad lepidopteran
- 2) Corn borer
- 3) Rootworm control

**Artesian:** An "A" indicates the presence of the Agrisure Artesian technology.

**E-Z Refuge:** Indicates products that contain 5% hybrid seed without insect control traits, simplifying refuge compliance as specified by the Canadian Food Inspection Agency for managing insect resistance.

**Example:** A corn hybrid with the Agrisure Viptera 3122A trait stack features one mode of action on broad lepidopterans, two modes of action on corn borer and two modes of action on corn rootworm. The name also tells you that this hybrid has Agrisure Artesian technology and integrated single-bag refuge.

<b>Agrisure</b>	<b>Duracade</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>A</b>	<b>E-Z Refuge</b>
Master brand	Brand suffix	Technology series	Traits				
			Broad lepidopteran	Corn borer	Corn rootworm	Artesian	Integrated, single-bag refuge

### Agronomic characteristics

	PRODUCT				MATURITY INFORMATION				AGRONOMIC CHARACTERISTICS						SEEDING RATE				POPULATION CONSIDERATIONS			
	Brand name	Trait	Agrisure Viptera®	E-Z-1 Refuge®	LibertyLink®	Relative maturity (RM)	CHU	RM to silk	RM to blacklayer	Emergence	Seedling vigour	Plant height	Ear height	Staygreen	Drydown	Test weight	Yield in 28-31K	Yield in 31-34K	Yield in 34-37K	Yield in >37K	Root strength	Stalk strength
<2600 CHU	NK7701	3110	✓	✓		77	2300	76	77	3	3	4	3	3	3	2	●	★	★	▼	4	2
	NK7837	3220	✓	✓	✓	78	2350	78	78	3	3	4	3	2	3	2	●	●	●	●	4	2
	NK8288	3110	✓	✓		82	2500	80	81	2	2	6	6	1	5	1	●	●	●	●	3	2
2600-3075 CHU	NK8519 <b>NEW!</b>	5222	✓	✓	✓	85	2650	86	85	3	2	3	4	3	3	3	★	★	★	▼	4	3
	NK8618 <b>NEW!</b>	5122A	✓	✓		86	2650	84	85	3	3	3	5	3	4	2	★	★	★	●	3	3
	NK8881 <b>NEW!</b>	5122A	✓	✓		88	2700	87	88	3	3	3	5	4	3	3	★	★	★	★	3	4
	NK8920 <b>NEW!</b>	5122	✓	✓		89	2725	89	88	2	2	3	5	2	3	3	★	★	★	★	3	3
	NK9227	3220A	✓	✓	✓	92	2750	92	92	2	3	2	2	3	3	2	●	★	★	★	4	2
	NK9227 <b>NEW!</b>	5222A	✓	✓	✓	92	2750	92	92	2	3	2	2	3	3	2	●	★	★	★	4	2
	NK9535	3220	✓	✓	✓	95	2850	95	95	3	3	3	4	2	4	2	★	★	★	★	3	2
	NK9610 <b>NEW!</b>	5222	✓	✓	✓	96	2850	93	94	3	3	3	4	3	3	3	●	★	★	★	2	3
	NK9738 <b>NEW!</b>	5222	✓	✓	✓	97	2900	95	97	2	2	3	2	3	3	3	●	●	★	★	4	2
	NK0243 <b>NEW!</b>	5122	✓	✓	✓	102	3075	101	102	3	3	5	5	2	3	4	●	●	★	★	2	2
NK0472 <b>NEW!</b>	5222	✓	✓	✓	104	3075	103	100	2	3	4	4	3	4	2	●	★	★	★	2	2	

### NEW! AgrisureDuracade

Hybrids highlighted green are Agrisure Duracade®.

### AgrisureArtesian

Hybrids highlighted blue are Agrisure Artesian. These hybrids maximize yield when it rains and increase yield by up to 15% when it doesn't.

### Corn chart key

#### Agronomic and disease tolerance ratings and population considerations

- 1 = Excellent
- 9 = Poor
- = Under evaluation

#### Continuous corn, seeding and adaptation ratings

- ★ Above average performance
- Average performance
- ▼ Hybrid may not perform consistently
- ✘ Hybrid not recommended
- Data not available

#### Silage ratings

- ★ Greatest opportunity to maximize performance relative to other hybrids in maturity group
- Performs well relative to other hybrids in maturity group
- ▼ Performance is lower relative to other hybrids in maturity group
- ✘ Performance is below desired levels relative to other hybrids in maturity group
- Data not available

	ADAPTATION TO SOIL TYPES/ YIELD ENVIRONMENTS				CONTINUOUS CORN	DISEASE TOLERANCE				SILAGE RATINGS									
	Drought prone	Highly productive	Variable soils	Poorly drained		Continuous corn	Grey leaf spot	Northern corn leaf blight	Goss's wilt	Eyespot	Yield (ton/ac)	CP (% of DM)	Starch (% of DM)	TDN (% of DM)	NEL (Mcal/lb)	Milk (lbs/ton)	Milk (lbs/ac)	Beef (lbs/ton)	Beef (lbs/ac)
	▼	★	●	●	●	-	3	6	3	-	-	-	-	-	-	-	-	-	-
	●	★	●	★	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-
	●	★	●	▼	★	-	2	6	4	-	-	-	-	-	-	-	-	-	-
	★	★	★	●	●	-	-	4	-	★	●	●	★	-	★	★	★	★	★
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	★	●	★	▼	-	-	3	3	3	-	-	-	-	-	-	-	-	-	-
	●	★	●	●	★	-	4	4	3	★	●	●	●	-	●	●	●	●	●
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	★	★	★	●	●	-	3	4	-	★	★	●	●	●	●	★	●	★	★
	★	★	★	★	●	4	5	3	2	★	▼	★	●	●	★	★	★	★	★
	▼	★	●	●	-	-	4	5	-	-	-	-	-	-	-	-	-	-	-
	✘	★	▼	★	●	4	4	4	-	★	●	★	★	★	★	★	★	★	★
	●	★	★	★	★	3	4	3	-	-	-	-	-	-	-	-	-	-	-
	●	★	●	★	★	4	5	3	-	-	-	-	-	-	-	-	-	-	-

This table provides silage quality and yield scores for selected NK hybrids based on actual tonnage and silage analysis values, and represents relative differences among hybrids of a similar maturity.



Seed products with the LibertyLink® (LL) trait are resistant to the herbicide glufosinate ammonium, an alternative to glyphosate in corn, and combine high-yielding genetics with the powerful, non-selective, post-emergent weed control of Liberty® herbicide for optimum yield and excellent weed control.

Consult bag tags for E-Z Refuge product herbicide options. Only those labeled E-Z-1 may be sprayed with glufosinate ammonium based herbicides, including Liberty® herbicide.


NOTE: Hybrid characteristics such as staygreen and drought stress tolerance are also important to consider when selecting hybrids for silage. Digestibility ratings are based on NIR and in-vitro digestibility analysis. Milk performance estimates generated from University of Wisconsin equations. Comparisons should only be made among hybrids within a maturity group. Although actual silage yield and quality analysis of a hybrid will vary with environment, the relative ranking of a hybrid will be similar. These ratings are a relative performance guide. Conduct a laboratory test to determine actual silage quality when balancing a feed ration.

All hybrid chassis and / or chassis combinations are subject to change.

RM 77	<b>NK7701-3110</b>
	 <b>Agrisure Viptera</b> 3110
CHU 2300	<ul style="list-style-type: none"> <li>• Exceptional test weight and grain quality</li> <li>• Outstanding stalk strength for easy harvestability</li> <li>• Strong disease resistance with excellent staygreen</li> </ul>

NEW TRAIT VERSION	RM 86	<b>NK8618-5122A</b>	E-Z Refuge®
		 <b>Agrisure Duracade</b> 5122 E-Z Refuge®	
	CHU 2650	<ul style="list-style-type: none"> <li>• Elite genetics with Agrisure Artesian technology</li> <li>• Strong stalks and roots</li> <li>• Heavy test weight</li> </ul>	


RM 78	<b>NK7837-3220</b>	E-Z Refuge®
	 <b>Agrisure Viptera</b> 3220 E-Z Refuge®	
CHU 2350	<ul style="list-style-type: none"> <li>• Very good emergence and vigour</li> <li>• Heavy test weight with good grain quality</li> <li>• Great drought tolerance for consistent yields</li> </ul>	

NEW	RM 88	<b>NK8881-5122A</b>	E-Z Refuge®
		 <b>Agrisure Duracade</b> 5122 E-Z Refuge®	
	CHU 2700	<ul style="list-style-type: none"> <li>• New genetics with Agrisure Artesian technology</li> <li>• Semi-flex ear type allows population flexibility</li> </ul>	

RM 82	<b>NK8288-3110</b>
	 <b>Agrisure Viptera</b> 3110
CHU 2500	<ul style="list-style-type: none"> <li>• Early flowering with superior test weight and grain quality</li> <li>• Very good emergence and seedling vigour</li> <li>• Excellent staygreen and late-season intactness</li> </ul>











NEW TRAIT VERSION	RM 89	<b>NK8920-5122</b>	E-Z Refuge®
		 <b>Agrisure Duracade</b> 5122 E-Z Refuge®	
	CHU 2725	<ul style="list-style-type: none"> <li>• Excellent emergence and seedling vigour for a fast start</li> <li>• Moderate stature with strong roots and stalks</li> <li>• Superb staygreen and late-season plant health</li> </ul>	

NEW TRAIT VERSION	RM 85	<b>NK8519-5222</b>	E-Z Refuge®
		 <b>Agrisure Duracade</b> 5222 E-Z Refuge®	
	CHU 2650	<ul style="list-style-type: none"> <li>• Strong stalks for season-long standability</li> <li>• Outstanding drought tolerance for consistent yields</li> <li>• Dependable emergence with excellent seedling vigour</li> </ul>	

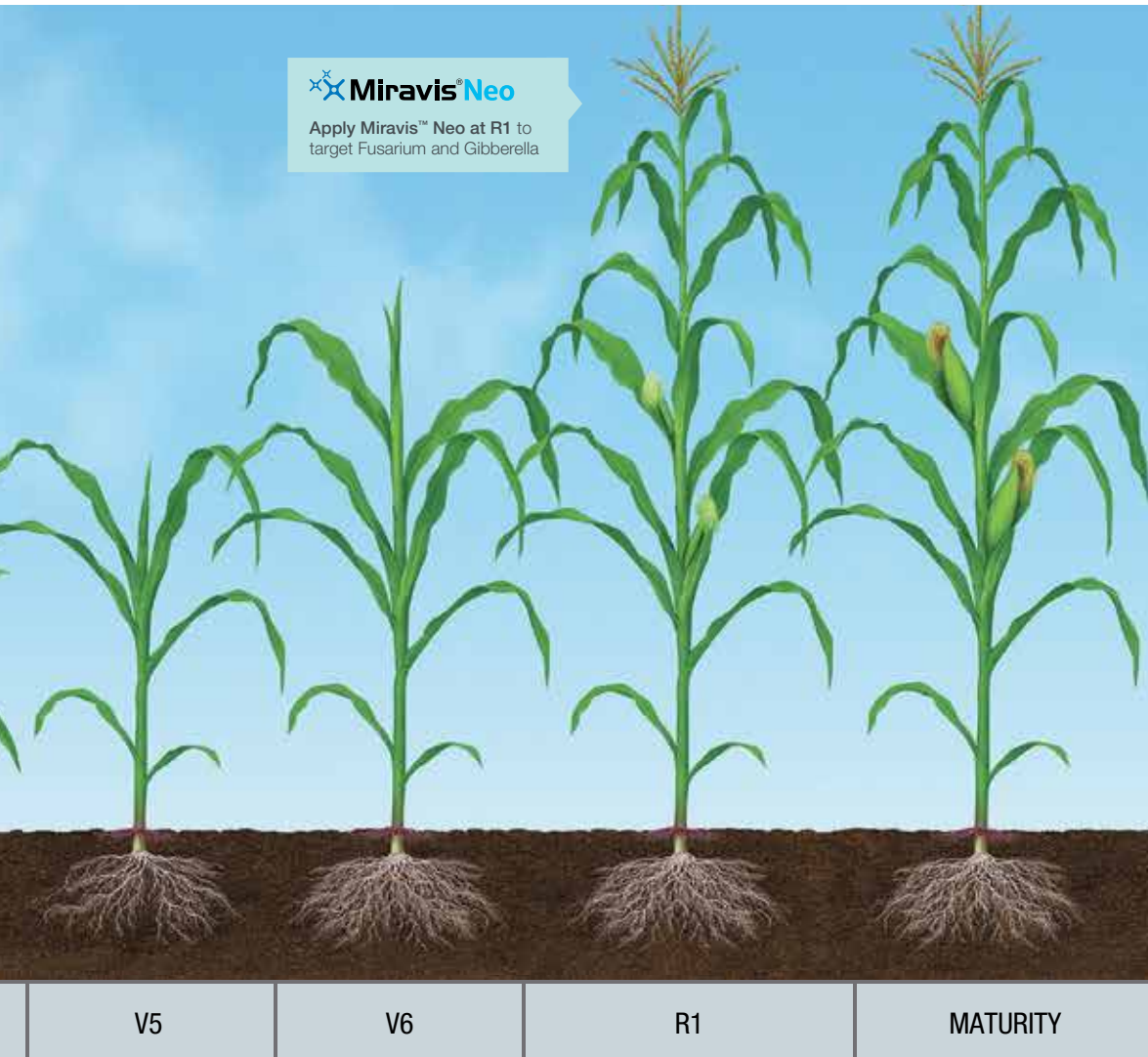
NEW TRAIT VERSION	RM 92	<b>NK9227-3220A/5222A</b>	E-Z Refuge®
		 <b>Agrisure Viptera</b> 3220 E-Z Refuge®  <b>Agrisure Duracade</b> 5222 E-Z Refuge®	
	CHU 2750	<ul style="list-style-type: none"> <li>• Exciting yield potential paired with Agrisure Artesian technology</li> <li>• Superb stalk strength for ease of harvest</li> <li>• Very good staygreen and drydown</li> </ul>	





	SEED	PE	VE	V1	V3
<b>1 PASS</b>					
					
Cruiser Maxx® Corn with Vibrance®, Maxim® Quattro with Vibrance or Fortenza® Maxim Quattro with Vibrance					
				Foundation Acre® 	
				Foundation Acre®  	
<b>2 PASS</b>					
					
Cruiser Maxx® Corn with Vibrance®, Maxim® Quattro with Vibrance or Fortenza® Maxim Quattro with Vibrance					
				Foundation Acre® Corn 	
					
					

<sup>1</sup> Callisto GT and Halex GT are for glyphosate-tolerant corn only.



 **Voliam Xpress<sup>®</sup>**

NEW!  **Miravis<sup>®</sup>Neo**

**Atrex<sup>®</sup> Liquid480**

 **Trivapro<sup>™</sup>**

**ak<sup>®</sup>**

 **Voliam Xpress<sup>®</sup>**

**Callisto<sup>®</sup>**

**Callisto<sup>®</sup>GT<sup>1</sup>**

NEW!  **Miravis<sup>®</sup>Neo**

 **Trivapro<sup>™</sup>**





### **The value of seed applied insecticides**

Seed applied insecticides (SAIs) represent one of the most advanced forms of crop protection technology available, offering growers a targeted, environmentally sustainable means of pest management. Applied directly to the seed only where needed, SAIs require less active ingredient per acre compared to foliar and soil-applied pesticides, and minimize off-target drift, reducing the impact on non-target organisms. For growers who require a fungicide-only seed treatment, NK soybean seed is available treated with Vibrance Maxx seed treatment, and NK corn seed is available treated with Maxim Quattro with Vibrance seed treatment.

### **Protecting pollinators on the farm**

Syngenta is committed to protecting pollinators and continues work to develop and implement additional solutions to address dust generated when planting treated corn and soybean seed and to further efforts on other bee health issues.

Best management practices for the handling of seed treated with an insecticide are an important tool to help maximize the benefits of seed treatments and protect bees and other non-target insects at the same time.

**For more information, please visit [beehealth.ca](http://beehealth.ca)**

Always read and follow label directions.

Syngenta is committed to the stewardship of offered technologies and requires Syngenta Stewardship Agreements from growers. The agreement outlines the terms under which a grower may grow and market the technologies sourced from Syngenta. Agrisure corn, Genuity® Roundup Ready 2 Yield® soybean, Roundup Ready 2 Xtend® soybean and specified conventional soybean seed will be delivered only to growers with valid agreements.

### Seed stewardship is everyone's responsibility

Before opening a bag of seed, be sure to read and understand the stewardship requirements applicable to the seed, including refuge requirements. In addition to the information provided on this page, stewardship requirements may be found in the Syngenta Stewardship Agreement that you sign and/or on the bags/tags accompanying the seed. By opening and using a bag of seed, you are reaffirming your obligation to comply with those stewardship requirements.

## Syngenta stewardship corn best management practices

### Insect resistance management (IRM)

Bt corn must have an insect resistance management plan.

This is a requirement set by the Canadian Food Inspection Agency (CFIA). It is also a strategy endorsed by leading scientists to reduce the risk of insect populations developing resistance to Bt corn. Syngenta is committed to following, supporting, and providing growers with relevant information to help them implement the IRM requirements set by the CFIA.

Therefore, all growers must sign a Syngenta Stewardship Agreement before ordering any Agrisure insect protected corn. Doing so will, in part, demonstrate their commitment to supporting the best management practices to reduce the potential risk of insects developing resistance to the Bt traits.

It is important to recognize that different products may have different insect resistance management requirements (see corn refuge requirements on page 36).

### Failure to comply with refuge requirements may:

- Lead to insect resistance
- Slow down the introduction of new corn technologies that provide additional insect protection
- Affect grower access to Agrisure traited products

For more information about Syngenta corn stewardship, please visit: [Syngenta.ca/Corn-Stewardship](https://www.syngenta.ca/Corn-Stewardship)

### Scouting is essential!

Proper observation of your fields, as well as other integrated pest management strategies, will also aid in increasing the longevity of insect traits in the field. In order to first determine potential pest impact, a grower should consider pest populations in the area, crop damage from insect feeding seen in the previous year, and the rotation of the crop (to consider pest overwintering habitats).

Scout refuge plantings to determine the level of insect pressure in your field, then scout the Agrisure hybrids to note their effectiveness and look for signs of damage that may indicate resistance to either the Bt trait or the corn rootworm trait. If concerns arise, please contact your local Syngenta Agronomic Sales Representative immediately for further field investigation.

### Growers should rotate every year if:






- Fields have been in long-term continuous corn systems
- Target insect populations are high
- There have been problems with insect-resistant trait performance

Rotation to crops such as soybeans, alfalfa or small grains will aid in removing the pests' food source and cause a population shift.

NOTE: Crops or other material produced from Agrisure corn trait products can only be exported to, used, processed and/or sold in countries where all necessary regulatory approvals have been granted.

## Corn refuge requirement

On-farm mixing of any seed is not an approved method of incorporation of refuge into traited seed. Syngenta is pleased to provide hybrids with E-Z Refuge for built-in compliance. For more information on the refuge requirements for your corn seed, please see the table below:

PRODUCTS	MINIMUM REFUGE REQUIREMENT	LOCATION AND ROW SPACING	WHY?
 	20%	Adjacent to or within Bt field (4 row minimum; see planting options below)	<p>Serves as an appropriate refuge for all pests targeted by these traits, including corn rootworm and European corn borer (ECB), or the Multi-Pest Complex™*</p> <p>Appropriate size to ensure enough susceptible Bt corn refuge mates are available</p>
  	E-Z Refuge	5% appropriate refuge material blended into the bag	<p>Serves as an appropriate refuge for dual Bt traits to control European corn borer and/or the Multi-Pest Complex*</p> <p>Appropriate amount to ensure enough susceptible Bt corn refuge mates are available</p> <p>Additional convenience to ensure refuge is planted in all fields</p>

Any of the above trait versions available in the water-optimizing Agrisure Artesian option would not change the refuge requirements.

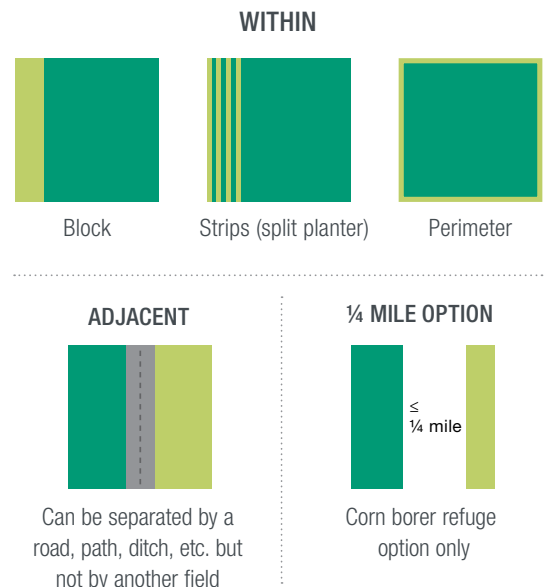
## Refuge calculator

For corn varieties that are not available as E-Z Refuge, the Canadian Corn Pest Coalition, in collaboration with the Ontario Corn Committee, the Canadian Seed Trade Association and industry, have developed a web-based calculator to help growers develop a plan to meet the minimum refuge requirements for each Bt corn hybrid on their farm. The calculator can be accessed at [refugeselector.ca](http://refugeselector.ca). Remember, when calculating a refuge area, the calculation must be based on total corn acres.

## Refuge planting options

Depending on the pest for which the refuge is being designed, there are various designs of refuge planting that will be effective. It can be planted in the following configurations:

- Block within the Bt field
- Perimeter around the Bt field
- Separate block within a quarter mile of the field (ECB only)
- Strips within the Bt field
- Block adjacent to the Bt field



**NOTE:** A neighbour's field that does not contain Bt traits does not meet the refuge requirements.



\*Multi-Pest Complex includes black cutworm, western bean cutworm, fall armyworm, corn earworm and common stalk borer.

Before opening a bag of seed, be sure to read and understand the stewardship requirements, including applicable refuge requirements when planting insect protected traits as set forth in the Syngenta Stewardship agreement that you sign. By opening and using a bag of seed, you are reaffirming your obligation to comply with those stewardship requirements.

To view recommended planting layouts, maps and configurations, please visit the Canadian Corn Pest Coalition at [cornpest.ca](http://cornpest.ca) or request a Grower's Handbook at 1-800-756-7333.











### Benefits of Certified Seed

Sharing the Message – Success, Farmers Plant It

A purchase of Certified Seed opens the door to new opportunities for success:

- Quality assurance
- Access to new and improved varieties
- Efficient use of inputs
- New marketing opportunities
- Supports the development of new varieties for the future



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LibertyLink®, Liberty® and the Water Droplet logo are registered trademarks of BASF. Consult bag tags for E-Z Refuge product herbicide options.



### THE FOLLOWING APPLIES TO ALL GENUITY® ROUNDUP READY 2 YIELD® AND ROUNDUP READY 2 XTEND® VARIETIES.



**Monsanto Company is a member of Excellence Through Stewardship® (ETS).** Monsanto products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Monsanto's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. This product has been approved for import into key export markets with functioning regulatory systems. Any crop or material produced from this product can only be exported to, or used, processed or sold in countries where all necessary regulatory approvals have been granted. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted. Growers should talk to their grain handler or product purchaser to confirm their buying position for this product. Excellence Through Stewardship® is a registered trademark of Excellence Through Stewardship.

**Always read and follow label directions.** Genuity® Roundup Ready 2 Yield® crops contain genes that confer tolerance to glyphosate, the active ingredient in Roundup® brand agricultural herbicides. Roundup Ready 2 Xtend® soybeans contain genes that confer tolerance to glyphosate, an active ingredient in Roundup® brand agricultural herbicides, and dicamba, the active ingredient in XtendiMax® herbicide with VaporGrip® Technology. Agricultural herbicides containing glyphosate will kill crops that are not tolerant to glyphosate, and those containing dicamba will kill crops that are not tolerant to dicamba. Genuity®, Genuity and Design®, Roundup Ready 2 Xtend®, Roundup Ready 2 Yield®, Roundup®, VaporGrip® and XtendiMax® are trademarks of Monsanto Technology LLC, Monsanto Canada, Inc. licensee. © 2019 Monsanto Canada Inc.

**Hybrid brand names, as opposed to variety names, are stated in this seed guide. Please contact Syngenta directly or consult the product's bag/tag to obtain the product's variety name.**

**Performance evaluations are based on field observations and public information. Data from multiple locations and years should be consulted whenever possible. Individual results may vary depending on local growing, soil and weather conditions.**

**These are general considerations. Always consider the specific situation on your field and exercise good agronomic practices.**

**NK® soybean varieties are protected under granted or pending Canadian variety patents and other intellectual property rights, regardless of the trait(s) within the seed.**

**Corn and soybean seeds treated with thiamethoxam are classified as a Class 12 pesticide in Ontario. Corn and soybean seeds which are not Class 12 pesticides are also available for sale from Syngenta.**

**Always read and follow label directions.** Cruiser Maxx Corn with Vibrance is an on-seed application of Cruiser 5FS Seed Treatment insecticide delivered at the 0.25 mg a.i./seed rate, Maxim Quattro Seed Treatment fungicide, and Vibrance 500FS Seed Treatment fungicide. Cruiser Maxx Vibrance Beans is an on-seed application of Cruiser Maxx Beans Seed Treatment insecticide/fungicide and Vibrance 500 FS Seed Treatment fungicide. Fortenza Maxim Quattro with Vibrance is an on-seed application of Fortenza Seed Treatment insecticide, Maxim Quattro Seed Treatment fungicide and Vibrance 500 FS Seed Treatment fungicide. Fortenza Vibrance Maxx is an on-seed application of Fortenza Seed Treatment insecticide and Vibrance Maxx RFC Seed Treatment fungicide. Maxim Quattro with Vibrance is an on-seed application of Maxim Quattro Seed Treatment fungicide and Vibrance 500 FS Seed Treatment fungicide. Trivapro is a co-pack of Trivapro A and Trivapro B fungicides. AAtrex®, Acuron®, Agrisure®, Agrisure Artesian®, Agrisure Duracade®, Agrisure Viptera®, Apron XL®, Boundary®, Callisto®, Clariva®, Cruiser®, Cruiser Maxx®, Endigo®, E-Z Refuge®, Flexstar®, Foundation Acre®, Fortenza®, Halex®, IP Globe™, Magnum®, Maxim®, Mertect®, Miravis®, Multi-Pest Complex™, NK®, NK® and Design, Peak®, Primextra®, Reflex®, Rooting Power®, SCN Solutions™, Seedcare™, Tavium™, Trivapro™, Venture®, Vibrance®, Vigor Trigger®, Voliam Xpress®, the Alliance Frame, the Purpose Icon and the Syngenta logo are trademarks of a Syngenta Group Company. Allegro® is a trademark of ISK Biosciences Corporation. Respect the Refuge® is a trademark of the Canadian Seed Trade Association. Other trademarks are the property of their respective owners. © 2019 Syngenta.

# Treat **RIGHT**

Go beyond seed protection.

Treat Right is a new stewardship initiative brought to you by Syngenta Seedcare™ and The Canadian Seedcare Institute, sharing best practices and our experience with the industry-led Agrichemical Warehousing Standards Association (AWSA) Accredited Seed Treatment Operation audit.

Whether you're a grower or a commercial or mobile seed treater, we're here to help with how-to videos, downloadable resources and treating tips.

**For more information, or to subscribe to email updates,  
visit [Syngenta.ca/TreatRight](http://Syngenta.ca/TreatRight)**



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